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Title:
The medieval landscape and economy of the Forest of Dean

THE MEDIEVAL LANDSCAPE AND ECONOMY OF THE FOREST OF DEAN

Elizabeth Linda Townley, M.A., B.A.(Hons), Cert.Ed.

A dissertation submitted to the University of Bristol in accordance with the requirements of the degree of Doctor of Philosophy in the Department of Archaeology, Faculty of Arts, October, 2004

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ABSTRACT

The author offers the thesis that the Forest of Dean was not simply an isolated wooded area on the edge of the Welsh Marches which was devoted to hunting, but was fully integrated into all aspects of medieval society. Multidisciplinary research, including archaeological excavation and field survey seeks to provide examples of a wide range of features, structures and sites, including Offa's Dyke, which represent responses to changing social, economic and political factors.

Field work to determine the evolution of the physical boundary of the River Severn, through land reclamation, plays an important role in the thesis because of its effects on other aspects of medieval life including settlement location, agriculture, fishing, trade and communications.

Results are presented in a thematic form, covering the riverine landscape, political landscape, the iron industry, vert and venison (woodland and hunting), fishing and religious foundations. It enables individual aspects of medieval life to be evaluated in respect to contemporary outside developments in each field as well as enabling comparison of the interaction and influences between them within the geographically restricted area of Dean.

ACKNOWLEDGEMENTS

I would like to thank my supervisors, Dr. M.C. Horton, Dr. A.J. Parker and Dr. M. Costen, and Professor C. Hawkesworth for their advice and support throughout my research.

I am also grateful to staff at the NMR, SMRs, Public Record Office and local Record Offices, Libraries and Museums, the Environment Agency and all other official sources who gave assistance, and to the numerous landowners who allowed access to their property for fieldwork. All those individuals whose previous work has added background information to this dissertation, either personally or through published work, are acknowledged individually within the text.

The work was supported by a scholarship from the University of Bristol.

AUTHOR'S DECLARATION

I declare that the work in this dissertation was carried out in accordance with the Regulations of the University of Bristol. All work is original except where indicated by special reference within the text.

No part of the dissertation has been submitted in candidature for any other degree at this, or any other, University either in the United Kingdom or overseas

Any views expressed within this dissertation are those of the author and in no way represent those of the University of Bristol.

Signed: E.L.Ty Date: 22/10/04

Elizabeth L. Townley

PUBLICATIONS

Work included in this thesis has been published as follows:

Townley, E.L. 1998 Fieldwork on the Forest Shore: Stroat to Woolaston. in S.E.L.R.C. Report. No.9 (Ed. S. Rippon) Exeter: 80-83

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Fig.1. Location map:

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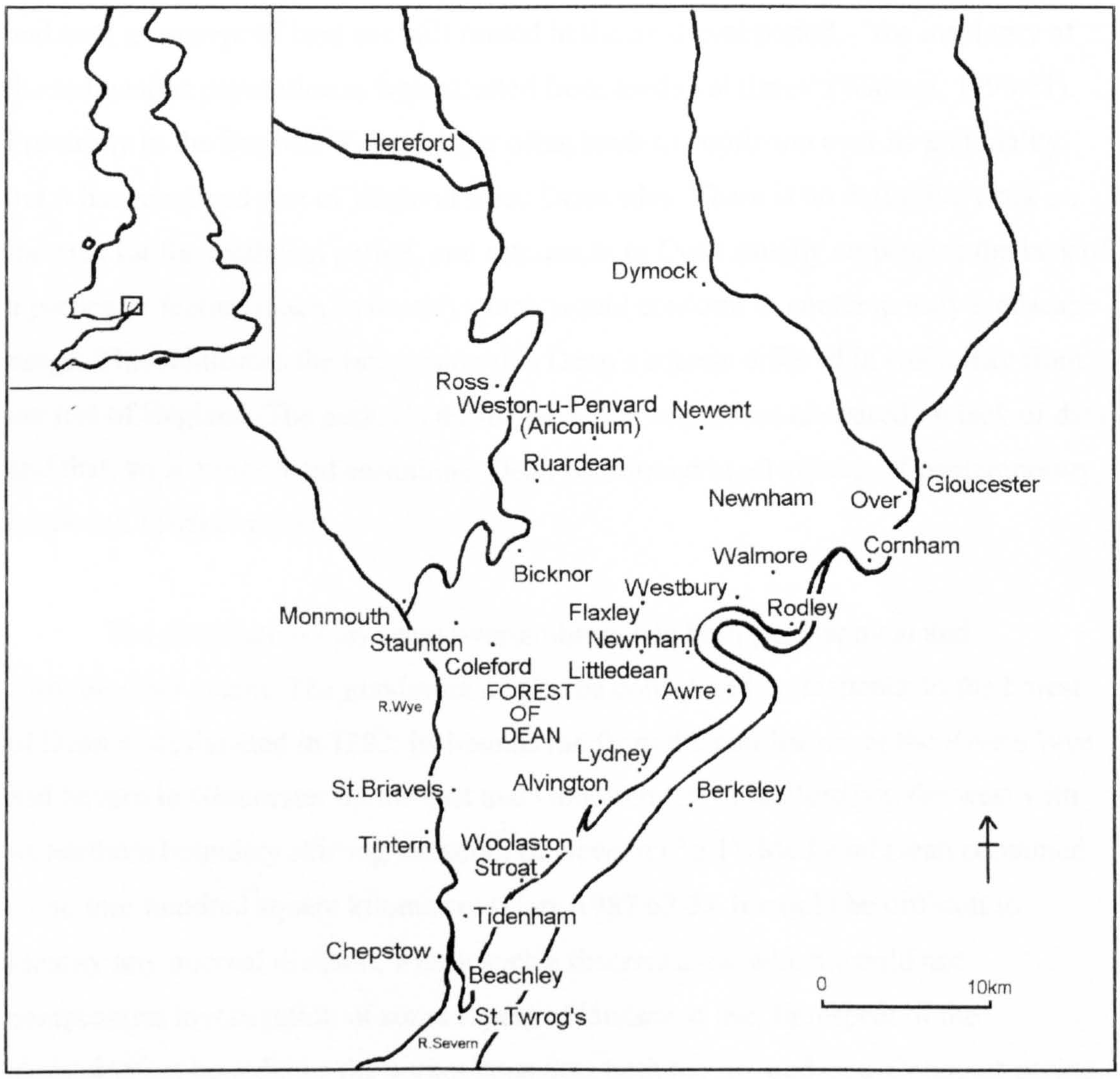


CHAPTER 1: INTRODUCTION

Description and Research Objectives

This dissertation is an examination of the changing patterns of landscape use in the Forest of Dean during the medieval period. The Forest of Dean is a rural area circumscribed by the Rivers Wye and Severn in modern West Gloucestershire. It is commonly perceived as an insular area with an inbred population, resistant to change and with a concept of land use still rooted in the medieval period - 'the insularity of the indigenous population is well attested from medieval times' (Walters, 1993:61). Proximity to the English/Welsh border often leads to confusion over its nationality, but it has remained part of England since Domesday. There is no definitive work on the area for the medieval period, and references to Dean usually emphasise the lack of a particular feature (such as moats) which would conform to contemporary landscape usage. This reinforces the impression that Dean's society differed in some way from the rest of England. The author's thesis holds that such ideas are based on lack of data and that, with minor local variations, Dean conformed to all aspects of contemporary, medieval, English society.

The dissertation may seem over-ambitious in both geographical and chronological extent. The maximum area to be considered corresponds to the Forest of Dean as designated in 1282: its bounds ran from the confluence of the Rivers Wye and Severn to Gloucester on the east and Goodrich ferry (Walford) on the west with its northern boundary skirting the south of Newent (fig.1). Medieval Dean contained some four hundred square kilometres (Hart, 1987:62-3). It would be difficult to identify any internal division, within such a discrete area, which would not compromise investigation of some aspect of landscape use. In respect of the chronological boundaries the author considers both the pre-and post-Conquest period, covering a thousand years; the former includes the Anglo-Saxon era and extends into the Dark Ages of the post-Roman period. Without some reference to this formative phase it would be difficult to place the later period in context. With no definitive work available for reference, a map of the distribution of known Roman sites is included (fig.2). The Dissolution is used as a convenient termination for the dissertation as it marked the removal of a distinctly medieval institution and a major change in land use.

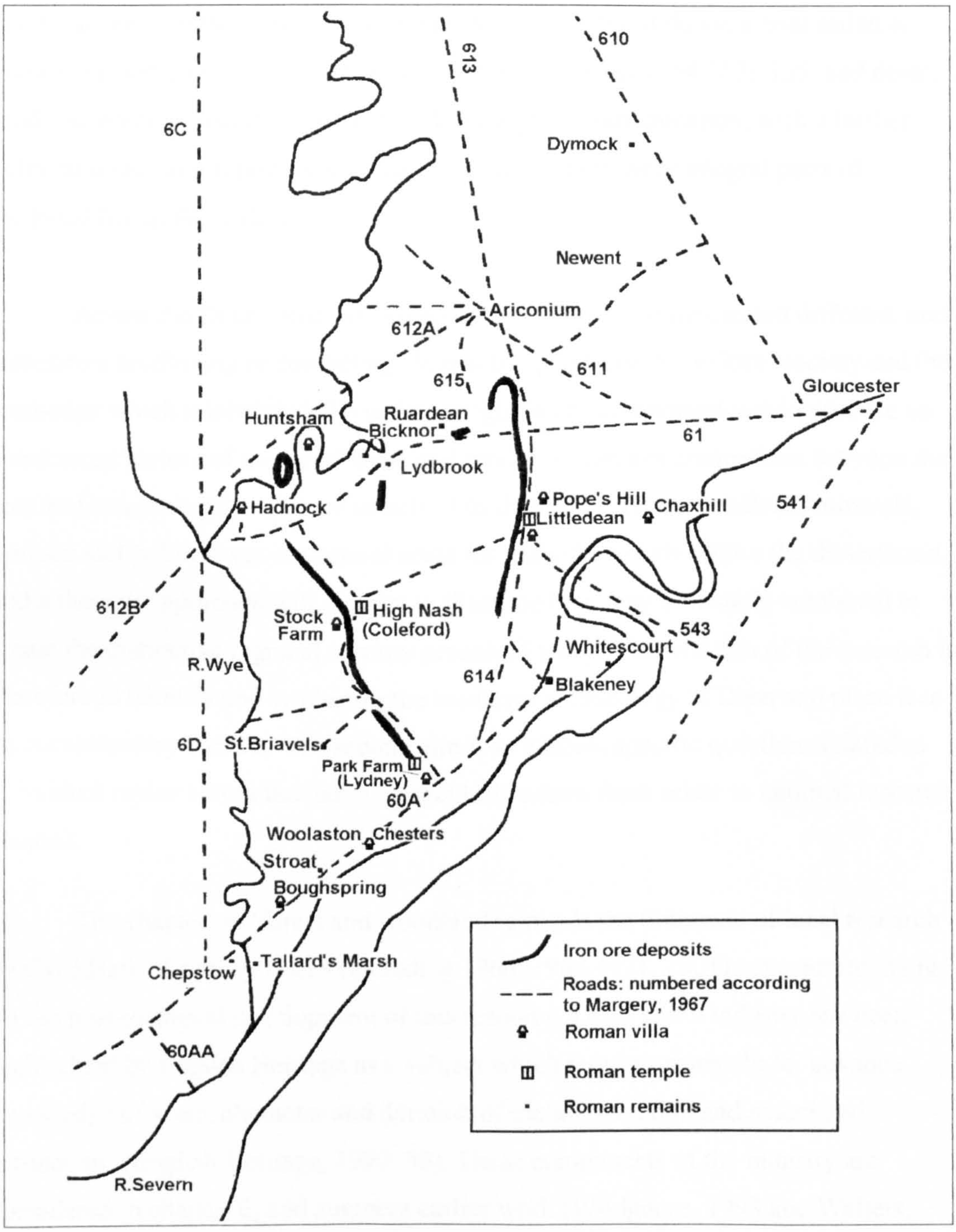


Fig.2 The Roman Landscape

Religious institutions were only one aspect of medieval land use. Other aspects of land use are represented by the author's own family whose twentieth century occupations include: miner (who commoned sheep), stonemason, woodcutter, fishermen (including elvering), farmer, charcoal burner and estate workers at Flaxley Abbey. These represent exploitation of local resources undertaken by those living along the Severn margins and would be as relevant during the medieval period. An

inquisition from Awre describes events of a single day in the fourteenth century: a child was born, another drowned in a well, the bakery burnt down, a boat sailed for France and someone began a religious pilgrimage (Stokes,1914:167). Life and death, food and water, housing, religious belief, trade and communication, with a further political dimension represented by the inquisition itself, were integral parts of medieval life in this village.

Across the Dean these various aspects are likely to have created different, and sometimes conflicting or competing, demands and influences on local society and the landscape which it inhabited. To isolate or ignore any component would produce an unbalanced picture of medieval Dean and render invalid any comparison between the area and external contemporary society. The themes of rivers, woodland, minerals, religion and politics provide natural areas for individual study within the dissertation, and a thematic approach will attempt to illustrate how they ultimately combined to create the distinctive regional identity perceived today. The first aim of the research is therefore to identify and synthesize the medieval archaeology of Dean and place it in its contemporary context. The second aim is to address specific questions related to individual topics within the thesis, particularly where these relate to national research projects.

The chapter on 'forest and woodland' extends the timescale of local research by Cyril Hart. His many books (including 1966, 1968,1971, 2001) concentrate mainly on the post-medieval development of this resource. Dean's iron industry has been highlighted by English Heritage as a subject which requires research: to 'advance knowledge of scale, character and duration of metal extraction and associated settlement' (English Heritage, 1990: 53). These components of the industry are considered in chapter 6, and augment earlier work (Wildgoose, 1993 and Walters, 1999); these identified extraction and processing sites, predominantly of the Roman period. Coastal heritage has been identified as a priority by English Heritage and the R.C.H.M.E. in the light of climatic change, rising sea level and erosion. In their comprehensive survey of 1997 the need for research into fishing in Gloucestershire's Inner Severn Estuary is given 'two star' rating, with sea and flood defences also prioritised (Fulford et al. 1997: fig.128); the authors suggest that the dynamics of the resource should be considered in both maritime and terrestrial contexts. Locally the

estuarine landscape is at threat from both natural and man-made processes but its archaeology is listed as only 29th/38th in the priorities listed in the Severn Estuary Strategy Plan (Taylor, 1998:1). In view of the progressive erosion and potential loss of archaeological data, the estuarine landscape forms a significant part of the author's research.

Redevelopment at Woolaston Grange in 1998 also provided a focus for rescue archaeology. It extended previous research, by the author, recorded in a dissertation on the Monastic Landscape of Dean (Bristol University, 1997). This earlier work assimilated all known monastic research on the Dean (reviewed in chapter 8) and described its monuments, layout and distribution as a discrete subject. The current dissertation concentrates on subsequent research and attempts to place the monastic component of the Dean landscape in context, evaluating potential influences on its location, patterns of landholding and development and affect on the contemporary landscape.

It is recognized that, given the wide geographical and chronological scope of the project and the timescale and word limit allowed for such research, the results will be limited. Such constraints might mitigate against such a project ever being undertaken. The current dissertation should be viewed, therefore, as a beginning.

Methodology and Sources

Documentary and Published Sources.

In addition to those noted above, a wide range of published and unpublished research material is available for the area, including the Victoria County History, Volume V, which concentrates on the Forest Hundreds. An earlier publication, Volume X, includes hundreds which, though now excluded from the Forest, were part of the medieval definition. Documents on which these volumes were based can be found in Gloucester Record Office. Estate records, wills, inquisitions post mortem, manorial records, the Hockaday Abstracts (Dean references from the Bodleian Library), mining and forestry records, individual depositions relating to archives or archaeological work, were all researched by the author at Gloucester; the archives of the Hereford, Taunton and Public Record Offices and the National Monuments Record at Swindon

were also consulted. Time constraints limited the use of original documents and most were used in either transcribed or translated form.

National records referring to the area include Domesday (Morris, 1982) and Poll Tax returns (Fenwick 1998). Feudal Aids, Court Rolls, Close Rolls, Pipe Rolls and Liberate Rolls record forest administration and distribution of its resources (HMSO). Ecclesiastical sources include the '*Taxatio Ecclesiastica*' and '*Valor Ecclesiasticus*' in addition to extant cartularies of the local religious houses. References for the pre-Conquest era are found in the Llandaff Charters (Davies, 1979) and Anglo-Saxon Charters (Grundy, 1935: 237-253) though, in the latter, only Tidenham is described in detail. These charters are summarized in the appendix . Local administrative archives of the post-Conquest period include court records and surveys, such as the detailed '*Regard*' of 1282 (Hart, 1987).

References to the Dean are made in various academic publications, as part of wider studies. These are too numerous to be individually listed here, but the contribution made by their authors is evaluated and discussed in individual chapters related to their particular subject.

Cartographic Sources

The Public Record Office holds only five early maps of the area, all post-medieval. The most highly detailed (PRO. MR 879) is dated 1608 and measures c.3m long. It was part of a government survey and covered the central Forest (other sections are lost), and was studied by Ian Standing (1997). The map is referred to in the text as the 1608 map. A contemporary, though undated, map covers the Severn littoral from Awre to Gloucester, overlapping with one of Ruddle, the manor south of Newnham (PRO. MR 379). Eighteenth-century maps cover many of the larger estates, such as those of the Beaufort, Colchester and Crawley-Boevey families, together with a set of Land Registry surveys (PRO. MR F17). Individual owners have separate records of their scattered holdings. All are indexed in Gloucester Record Office under parishes, including the earliest (fifteenth century) map of strip fields on Lydney's 'New Ground'. Nineteenth-century maps by the Commissioners of Sewers cover the Severn Levels. These maps are contemporary with the Tithe Return series and early Ordnance Survey maps. Tithe Maps cover the majority of the Dean parishes; Flaxley,

being tithe free, has no record. They are only available, however, in transcribed form (G.Gwatkin) in Gloucester Record Office.

Place-names

Interpretation of English place-names has been undertaken by Ekwall, Gelling, Hooke and the English Place Name Society. It is not an exact science; in some cases, it offers no explanation, or one which is unlikely. Awre provides an example; one suggestion offered by the EPNS is that it may have derived from *arle*, meaning bitter land. As Awre was one of the most productive agricultural areas in Domesday this seems unlikely. It is therefore felt that such evidence should be used with caution, particularly in an area where both British and English names occur; Stroat has been linked to Roman origins, but could equally be derived from the later, Welsh, *strat.* Names can, however, indicate contemporary landscape features, give an indication of date, link settlements into groups or suggest function. They have, therefore, been used in the dissertation to complement other data.

Archaeological Evidence

The Transactions of the Bristol and Gloucester Archaeological Society contain individual reports on miscellaneous sites examined by enthusiasts for over a century. The Woolhope Naturalists Club Transactions contain similar work relating to the northern area of the Forest. During the last decade local archaeologists have pooled some of their findings into their association (Dean Archaeology Group) publications, though much remains unpublished or held in individual documents in Gloucester Records Office. Both the local SMR (Sites and Monuments Record, Gloucestershire County Council) and NMR (National Monuments Record, Swindon) have sparse, often unsubstantiated records of finds and sites, though more detailed reports and surveys are now being commissioned, particularly under the influence of building legislation 'PPG16'. Special interest groups also have their own publications and communications network, such as the National Association for Historic Mining Organisations (NAHMO) for mining, The Gloucester Industrial Archaeology Group, the Offa's Dyke Project (David Hill) and Severn Estuary Levels Research Committee (SELRC) for the river margins. Related to the last are the many publications of J.R.L. Allen (see References). As well as providing local information the wealth of this research enables comparisons to be made within a wider regional context.

Environmental Background.

The major rivers which define the areas are tidal, with the Severn's tidal range, twelve metres, being the second highest in the world. It also produces the phenomenon of 'the bore', a particularly high tide running up the inner estuary, preceded by a head wave which can reach a speed of eight knots and a height of two metres; it is formed by constriction of the river channel by the headlands at Naas and Sharpness. Bores occur as part of the normal lunar cycle of tides of advancing height (springs) and diminishing ones (neaps). The scale of this tidal cycle varies throughout the year and the major bore occurs around the spring equinox, with a lesser one in the autumn. In all cases the change from low water to an incoming tide is rapid, denoted by a rumbling spearhead of water advancing up the channel followed by an immediate filling of the river. This, together with changing water channels, whirlpools, undercurrents and quick sands make the river particularly hazardous for fishermen and sailors.

Tidal height can also be affected by rainfall along the river from its source in Wales, and the strength of the prevailing south-westerly winds. This can produce direct flooding over the banks (in 1605 an extreme tide devastated Severn villages - the height of the flood is marked on the wall of Redwick church in Gwent). Indirect flooding of fresh water occurs inland when outflow via the tidal creeks (pills) is prevented by high river water. The wide shallow valley of the Severn contrasts with the meandering course of the Wye which has only a narrow flood plain and flows through a steep sided valley, including a limestone gorge above Chepstow, before its confluence with the Severn at Beachley. Its normal tidal limit is at Bigsweir, but Redbrook is occasionally reached by a particularly high tide. The remnants of prehistoric forest found in the intertidal zone, around Woolaston and around Rodley, demonstrate that the river has changed its course and dimensions over time. Increased water volume would affect the deposition and erosion patterns of the river and the landscape along its margins.

At present the alluvial margins are farmed, with an emphasis on grassland. Villages lie on the solid geology close to the river, concentrated in the more easily navigable area below Westbury. Newnham's large number of public houses are remnants of its history as a port, and the canalisation of the Cannop Brook at Lydney

enabled its port facilities to function until the end of the twentieth century. Farmland extends inland as far as the steep scarp which bounds the central uplands. A complete geological survey was published by Dreghorn (1968). He describes localised areas of diverse geology in the southern peninsula, but local uplands consist of limestone, which produces the steep Wye cliffs (fig.3). Woods and grassland predominate on the plateau from which powerful springs feed the streams that flow into the Severn and dissect the alluvial landscape.

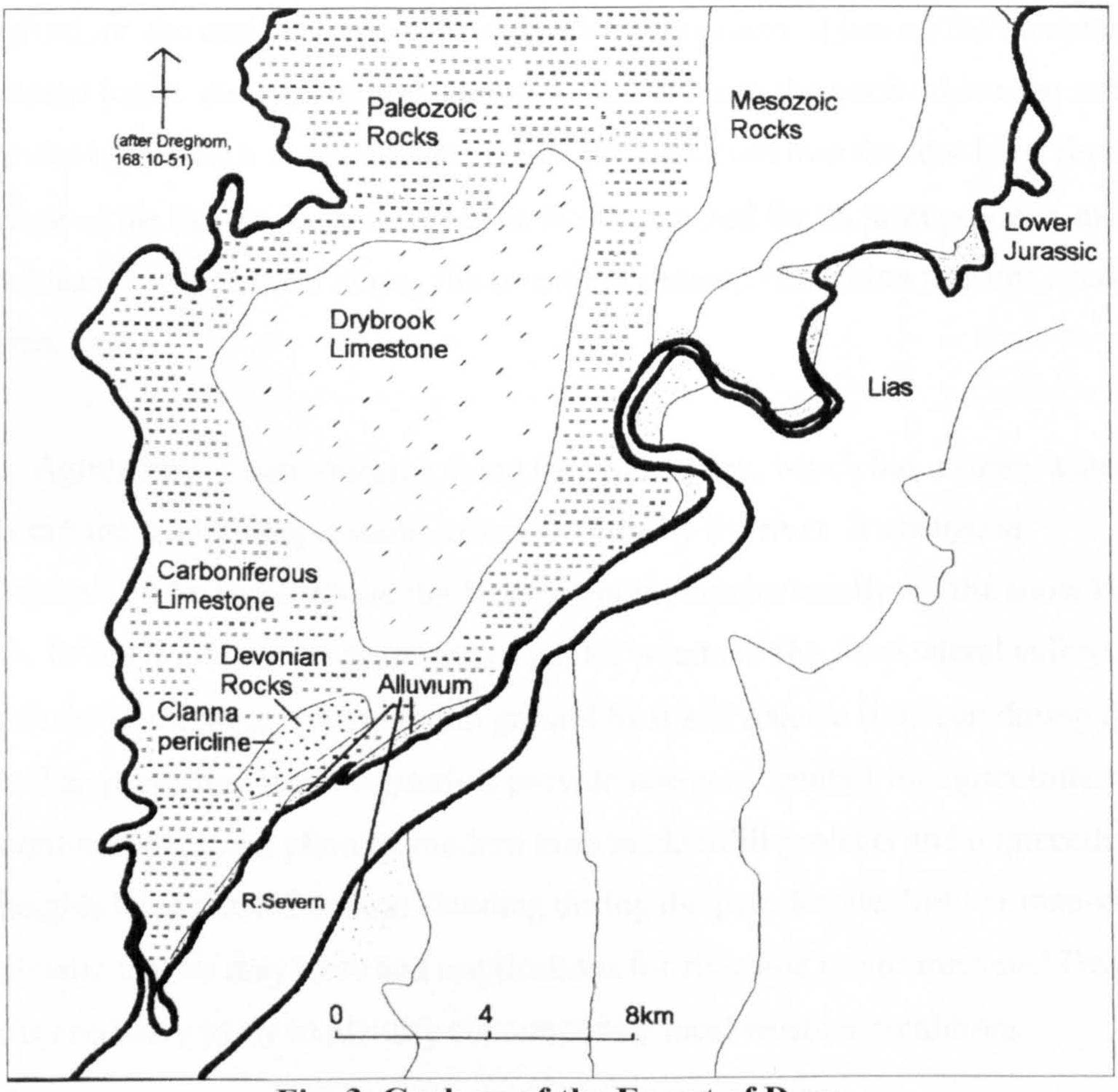


Fig. 3. Geology of the Forest of Dean

The central area of Dean is one of high relief, formed of a mixture of sandstone and limestone, broken by deep lateral valleys leading to the rivers. This is the wooded area for which modern Dean is noted, measuring approximately eighteen kilometres long by ten wide. Although plantations are fenced, the majority of the oak-edged woodland, with its numerous paths and tracks, is open as common land, and sheep and deer roam freely. The Forest forms part of the Hundred of St. Briavels whose male inhabitants have privileges, dating back to the Middle Ages, to mine for its minerals (iron and coal); open cast mines and drifts, both defunct and working can

be found scattered throughout this area. Habitation is located around the margins as small scatters or isolated dwellings whose owners still have the right to gather firewood from the woodland.

A band of agricultural land (mainly pastoral) stretches between the western edge of the Forest and the Wye, with Coleford the only town. Its industrial history can be seen in the archaeological remains of Whitecliff Furnace and Clearwell Caves. Cinderford, on the east, also has a history as a mining town; it lies on the boundary of the modern forest. An agricultural landscape continues to the north where the softer keuper marl provides a more subdued relief, flattening out into the low-lying fertile landscape of the Severn Vale. Apart from Newent, noted for its farm produce, and Mitcheldean, industrialised during the twentieth century, habitation remains small and scattered.

Agriculture is concentrated along the river valley, which has a sunny aspect, and where the winter temperatures are moderated by the river. A change in temperature can be found above the 100m contour, known locally as 'the snow line', with St. Briavels a focus for the worst of winter weather. The deep lateral valleys, particularly on the west, tend to retain ground frost and receive little sun during the winter. The prevailing south-westerlies provide adequate rainfall for agriculture. Diminution of the flood plain by modern man-made infill projects and unprecedented tidal heights have created serious flooding during the past decade. Similar man-made and climatic factors may have had implications for riverside use of medieval Dean and it is necessary to try to identify contemporary local weather conditions.

Climate research has provided evidence for general trends, though not specific to the Severn region (fig.4). Relative sea level in the Fenland and Humber wetlands appears to have been static or even lowered during the first century AD (Hall and Coles 1994:105 and Ellis, 1993:38-40 respectively). From AD 250 there seems to have been a progressively milder and drier climate, particularly favourable for agriculture. Peat growth resumption suggests receding marine transgressions in the Somerset levels (Housley,1998) which would translate to the Severn in general. Lower rainfall, less ground water and hot weather would have allowed marshy land along the river margins to dry out during this period.

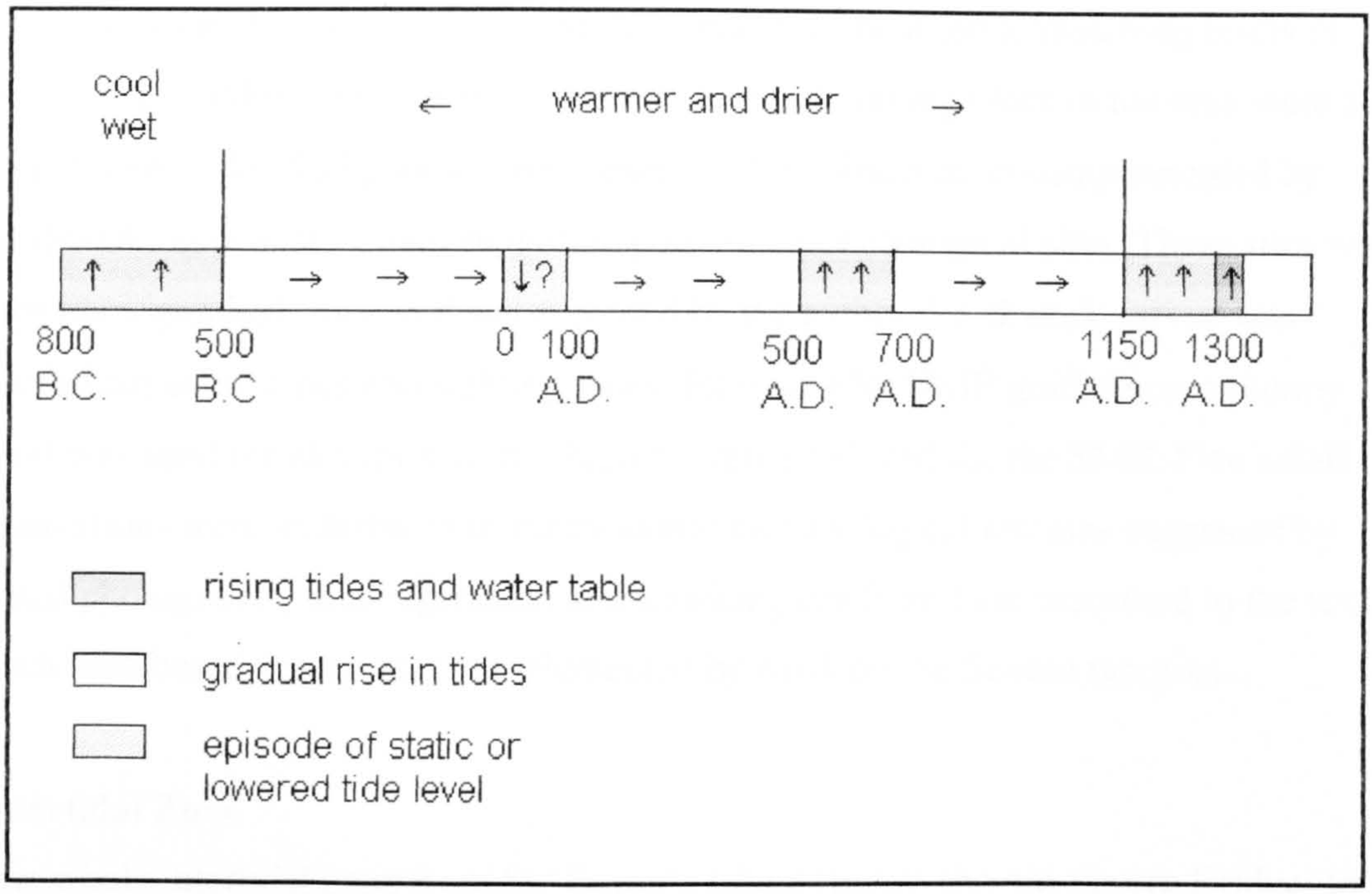


Fig.4 General climatic trends and relationship to ground water and tide levels

Tree ring evidence suggests that wetter conditions with colder summers had returned by the late sixth century and continued until the tenth century, except for a warmer interlude c. AD 700. Climatic conditions favourable to agriculture returned after the Conquest, building to an optimum c.1150-1300 before the rains of the fourteenth century brought failed crops and murrain (Baillie,1995: 89-107). Within this framework there appears to have been marked seasonal variance: 'ice' was recorded locally as the cause of damage to fishing weirs in the Severn. This must indicate prolonged cold spells; under modern conditions the Severn rarely freezes below Gloucester because of its brackish nature and low temperatures must be maintained for a long period, as in 1963. A difference in climate would have modified the potential for use and exploitation of the natural resources of the Dean and its economic aspect.

Field Work

Fieldwork was based on documentary, cartographic and aerial photograph evidence, together with information on sites previously recorded in the SMR. The author's local connections have had benefits in receiving personal information regarding potential sites. Access to property was denied on only two occasions - by builders concerned over PPG 16 (legislation requiring archaeological investigation of a site for which

planning is sought and where remains are thought to be likely). Watching briefs of large-scale building and quarrying projects currently taking place in the area were also undertaken. Individual parishes were examined by observation complemented by field-walking in areas which suggested potential archaeological sites. These sites were then photographed, surveyed and recorded by the author. Earthwork survey was carried out using tapes and sighting poles, following RCHME guidelines; a dumpy level was used for elevation work. Reports were produced for the SMR. Five small excavations were undertaken to verify extant archaeological remains suggested by aerial photographs, map regression and watching briefs and are described in the text. Such land-based survey was complemented by work on the Severn margins.

Intertidal Zone

The whole intertidal zone from St. Twrog's Island (below the old Severn Bridge) to Gloucester has been traversed in sections. 'Ground walking is perhaps the most fundamental technique in surveying the intertidal zone' (Fulford *et al* 1997) - but it is a time-consuming exercise. Timing of observation and recording is limited by difficult terrain, tidal phasing and safety requirements. Danger, from unpredictable currents and adhesive mud, prohibits working alone and telephone contact is essential. Aggressive erosional processes are currently occurring down-river from Lydney, where the Environment Agency has abandoned active management. A watching brief was undertaken, particularly after periods of high tides, to identify exposed organic archaeological remains which may rapidly deteriorate or be lost. At Woolaston a grid of pegs was established to relocate features for recording during the short windows of opportunity. In order to establish the changing interface between the Severn and its associated alluvial landscape, detailed surveys, from the river edge to the solid geology, were undertaken from Woolaston up to Cornham. These surveys determined the elevation of the riverside fields in relation to the current river-bank outside the seabanks. Such elevations can be used to identify the period during which these reclamations were made, using a scale (fig.5) compiled by J.R.L Allen and M.G. Fulford (1990b). Their hypothesis and method is described and discussed in chapter 2, in association with the author's own surveys (fig.6).

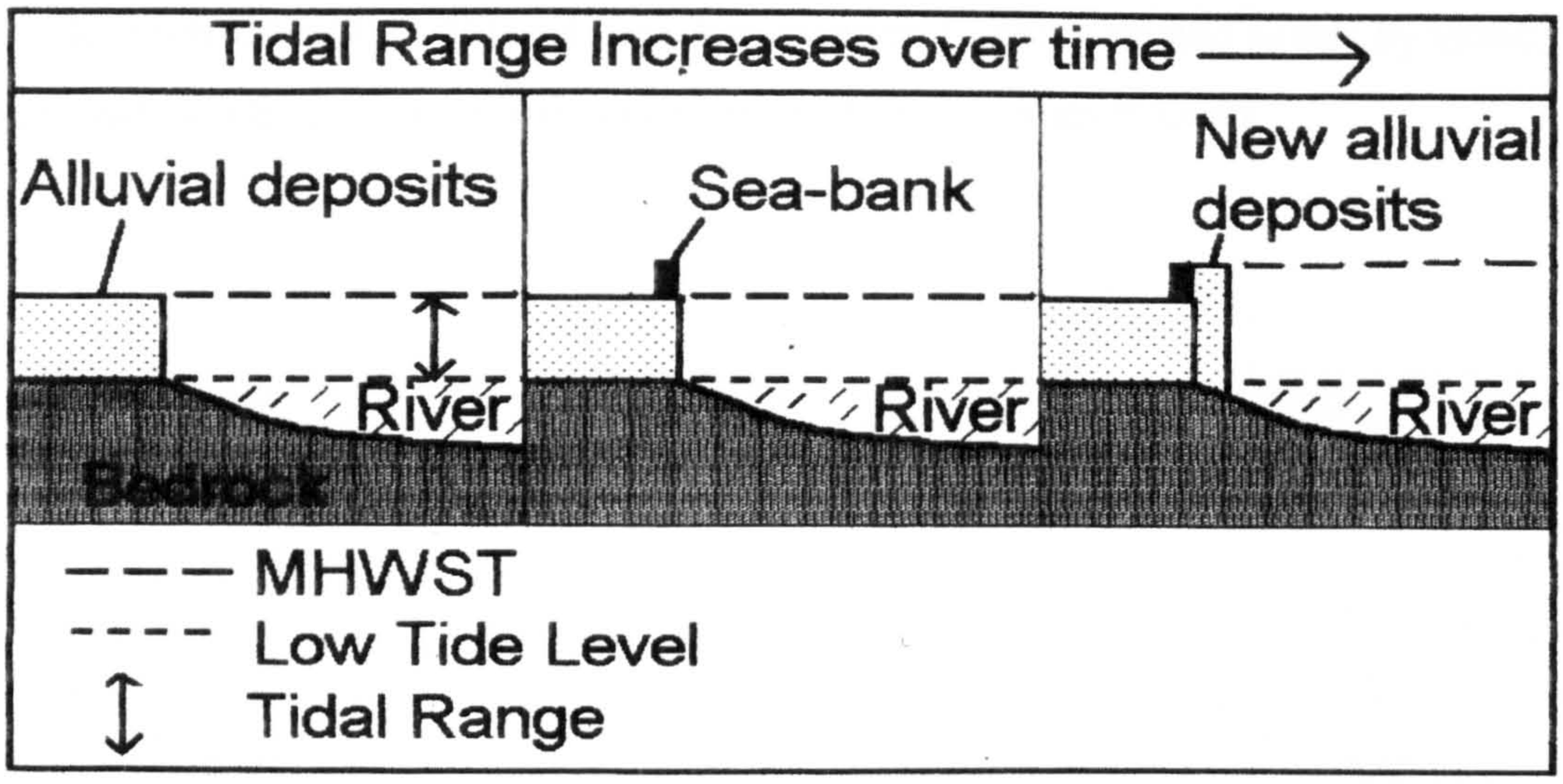


Fig. 5. Diagram of the formation of alluvial elevations

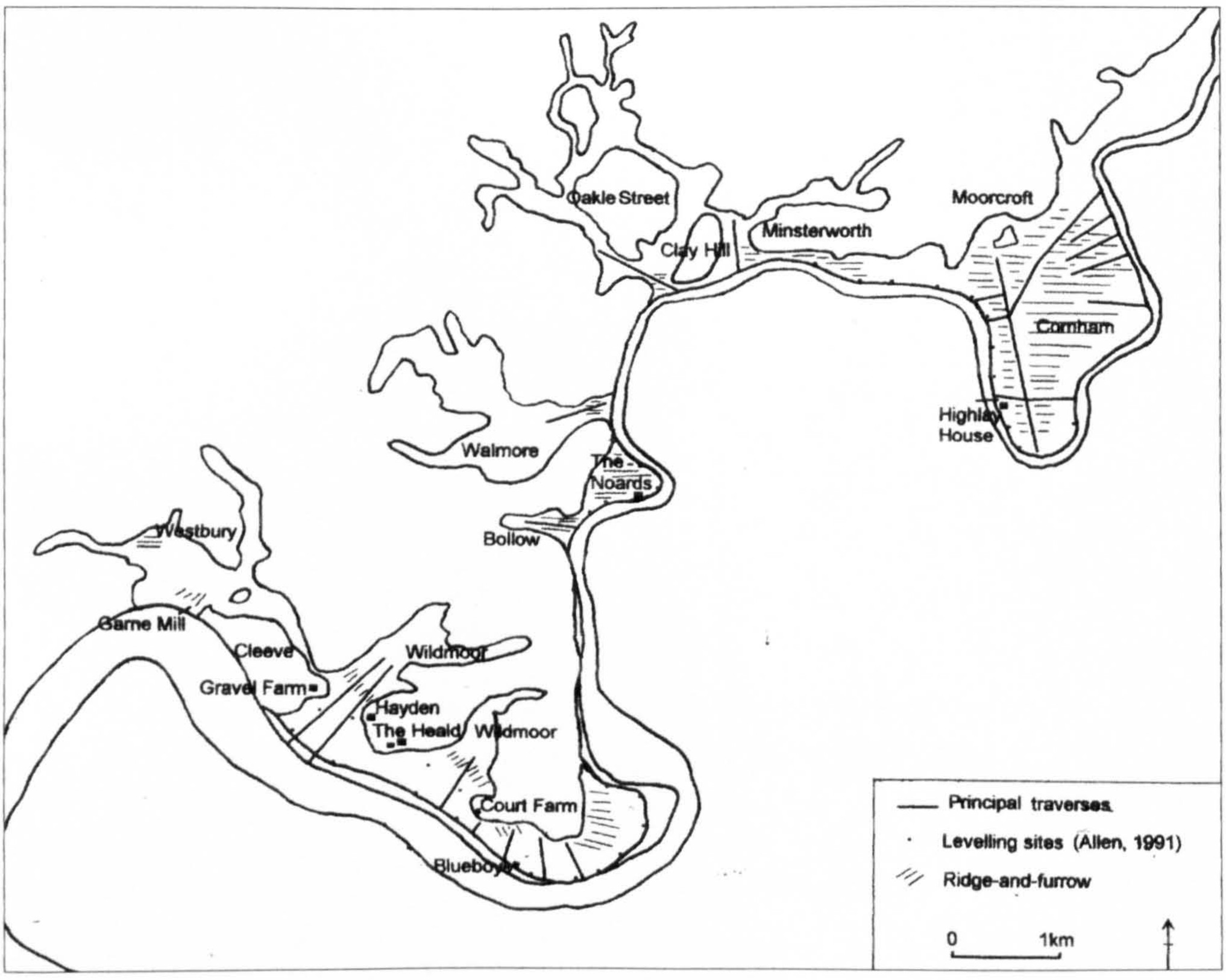


Fig. 6. Direction and extent of principal traverses to measure field elevation levels of the alluvial reclamations from Westbury to Cornham

Determination of the extent of the medieval riverine landscape has implications for the potential location of farming, associated settlement, fishing, trading networks and communications. A large proportion of the dissertation is

therefore related to the fieldwork and documentary research related to this dynamic, man-made landscape and its influences on the life of medieval Dean.

CHAPTER 2: THE ESTUARINE LANDSCAPE: MODIFICATION AND TRANSFORMATION

Introduction

The Severn margins of the Forest of Dean incorporate several discontinuous areas of estuarine alluvium (fig.7). These form part of a group of more extensive coastal wetlands around the Severn Estuary which stretch into the Somerset and Gwent levels. Though varying in structure between peat beds, salt marsh or fluvial sediments, these wetlands are all low-lying areas with a permanently high water-table and associated flooding or waterlogging.

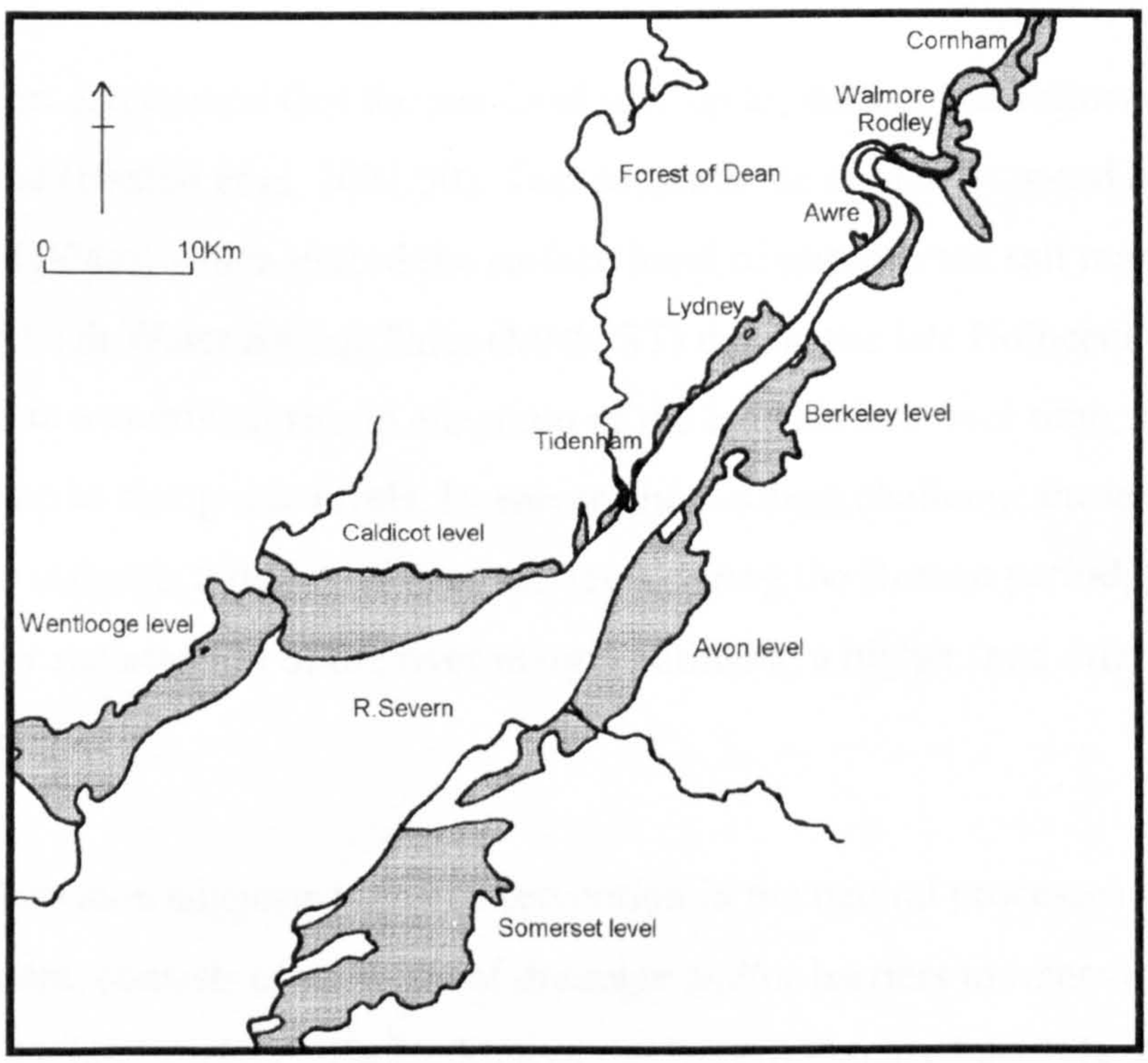


Fig. 7 Location of the alluvium bordering the Severn.

Along the modern River Severn, accelerating rates of erosion and flooding currently cause management problems for the Environment Agency. The local riverine landscape is dynamic, with a constantly changing boundary between land and river as the banks are washed away, particularly in the area down-river of Lydney. Removal of such material occasionally reveals archaeological features. In view of such an unstable relationship between land and river, ' "where is the sea?" is a fundamental question at all periods in the Severn Estuary' (Turner et al. 2001: 8).

Previous work

The geological and hydrological processes which relate to the formation and development of these estuarine environments are extremely complex and are beyond the scope of this study. A study designed to produce empirical data on the changing estuarine environment and its relationship to holocene sea-level change, was published in 2001 (Haslett et al. 2001: 35-54). Although based on the Somerset levels its results are applicable to other coastal lowlands. Using lithostratigraphy, diatom and foraminifera analysis, chemostratigraphy, and carbon dating it concluded that intertidal resources varied both spatially and temporally and that for any given period of time need to be demonstrated rather than assumed' (Haslett et al. 2001:50).

Haslett determined that the sea level rose up to, during, and following the Roman period (Haslett et al. 2001:50). This supports the model proposed by Allen and Fulford (1990b) which placed the surface level of unprotected salt marsh at that of the Mean High Water Spring Tides (MHWST) during the late Holocene. This would result in a continual rise in elevation of the land surface over time, maintaining its relationship to rising tide levels. However, the findings challenge those of Rippon (2000a) who suggests a fall in relative sea-level during the Roman period, with contemporary reclamation of the river margins utilising a higher (and drier) marsh environment.

Reclamation suggests human intervention in the natural processes and, in such an environment, consists of methods of drainage and/or barriers to remove or exclude water from the land surface. 'Embanking of the Severn Estuary Levels began in the Roman period' (Allen, 2001: 21), a view based on his earlier research (Allen, 1986, Allen and Fulford,1987) and on research by Rippon (1996, 1997a, 2000a and 2001). Bell notes that such modification and transformation of the landscape may have been 'possibly earlier' (Bell, 2001:87): he cites research at Goldcliff, Gwent, which provides radiocarbon dates for Iron Age ditching (Locock and Walker, 1998, Locock,1999). Such objective data is scarce; to date 'no Roman or Medieval seabank has been physically dated or even excavated in order to discover how it was constructed or maintained' (Turner *et al*:2001:9).

Construction of such barriers halted the natural processes of deposition in the area protected by the seabank; silt continued to accrue outside relative to the level of the Mean High Water Spring Tides. Such post-embankment siltation (the active marsh) produces a higher surface elevation outside the barrier than inside. There may be further embanking at a later date and this produces a landscape of stepped field elevations which rise towards the river. The opposite effect may be observed in some places, such as the current shorelines at Stroat and Woolaston, where erosion has taken place. Subsequent deposition has failed to match the original level of the active marsh and results in a step down in the field elevation, this time towards the river. Deposition rates can be rapid. A bottle bearing a manufacturer's date of 1906 was discovered, by the author, eroding from the base of the brown silt horizon which forms the mud cliff at Woolaston. The position of the bottle, below 1.2m silt suggested the amount of deposition accumulated during the last century. A similar rate of deposition buried the medieval landscape at Slimbridge after the seabank was breached in the nineteenth century (Allen, 1986).

Chronologies of these transformations of the Severn margins, by reclamation, are based on the elevation levels of the field surfaces. Particular elevations are individually dated by associated archaeological or historical data. Other land surfaces in the area, for which there is no data, can consequently be dated by similarity in elevation (Allen and Fulford, 1990b). The modern active marsh (outside the seabank) is used as the base line from which all depths are measured. The research on which this method was based was located on the Inner Estuary of the Severn, predominantly on the eastern shoreline around Longney, but with the Forest shore included in the results. It describes a landscape in which only 20% of Roman wetland reclamation in the Inner Estuary took place on the western shores, despite similar geological and topographical potential. Little change was noted in the Forest for the medieval period, although, in the country as a whole, the twelfth century was a period of widespread land reclamation for agricultural purposes (Miller and Hatcher, 1978: 35-6). The bulk of the modern riverine landscape along the Inner Estuarine boundaries of the Forest of Dean must, therefore, have been reclaimed during the post-medieval period (Allen and Fulford, 1990b).

Hewlett's work on the alluvial levels of the Inner Severn Estuary challenges Allen and Fulford's thesis: investigation 'does not support the suggestion that salt marshes [around Longney and Elmore] were reclaimed in the Roman period' Hewlett, 1997: 301-2). He does not dispute the general theory of salt marsh accretion, but notes further work which suggests that accretion rates can vary greatly within the same locality (Jennings et al.1995). Hewlett also notes that the Inner Estuary is not included in British salt marsh surveys in either Burd (1989) or L.P.Smith (1979) and that Arlingham was the inland limit of any recognisable saltmarsh (Burd, 1989:46). He therefore concludes that methodology which is based on salt marsh accretion and tidal increase is not applicable in the Inner Estuary; the research by Allen and Fulford (1990b) did not analyse the vegetative characteristics of the inner Severn marshes.

Differential rates of sedimentary accretion occur between fresh water marshes and their saline counterparts, with fresh water usually producing much higher elevations. Fluvial deposits reach a level which is independent of the tidal regime. Elmore and Longney (the areas of research by Allen and Fulford, 1990b) are currently dominated by river flow and therefore the elevations of marshes that fringe the estuary will be graded to a river, rather than tidal, level (Hewlett, 1987:301). He also notes that the silt-loading of a river may be variable and this could influence the level of surfaces attained through deposition. A further factor, noted, but dismissed as insignificant, by Allen and Fulford (1990b: 315) is that of constriction of the river channel caused by the construction of seabanks; this will create a new set of conditions which will affect the accumulation of sediment outside the bank (Hawkins, 1984: 219-234).

Further questions regarding the validity of the Allen and Fulford theory concern the context of the dating material used in the 1990 survey. Hewlett notes the paucity of pot sherds recovered after extensive field walking: six of the eleven areas produced no archaeological evidence, with only one sherd in one area and four in another. The location of more substantial amounts of sherds at Elmore and Longney, 301 and 507 respectively, was either on the edge of the river where building rubbish had been deposited on the bank, or adjacent to a bedrock island. He suggests that the

material was allocthonous - deposited through flooding events, inwash, or (from information from the local farmer), that the ground had been 'made up' and therefore material may have been imported. In some areas Hewlett claims that 'evidence of medieval reclamation has been ignored if it conflicted with altitudinal data: there is strong evidence that Awre was reclaimed in the twelfth century'. Awre sediments are of recent origin on the basis of borehole investigation (Anderson, 1968). This conclusion concurs with borehole findings at Rodley; these were stratigraphically different to other local wetlands and were deposited during river migration (Hewlett, 1997:304).

Traverses of boreholes and radiocarbon dating at Longney and Elmore (Hewlett, 1997: Figs.5.1-5.11) produced stratigraphies which were 'irreconcilable with Roman reclamation'. Results produced a date of 1570 BP, bringing it into the post-Roman period (Hewlett, 1997:302). He concedes that there may, however, have been small episodes of reclamation at an earlier date: stratigraphy around 'the Great Wall' (seabank) at Epney shows it was built on clay rather than later, sedimentary, deposits. A proposed halt, or even a reverse, in sea level after an initial flooding of Elmore, would mean that the surface stayed dry without need for any form of defence against flooding until deposition of sediments known as the Rhumney formation started at 550BP (Hewlett, 1997:300).

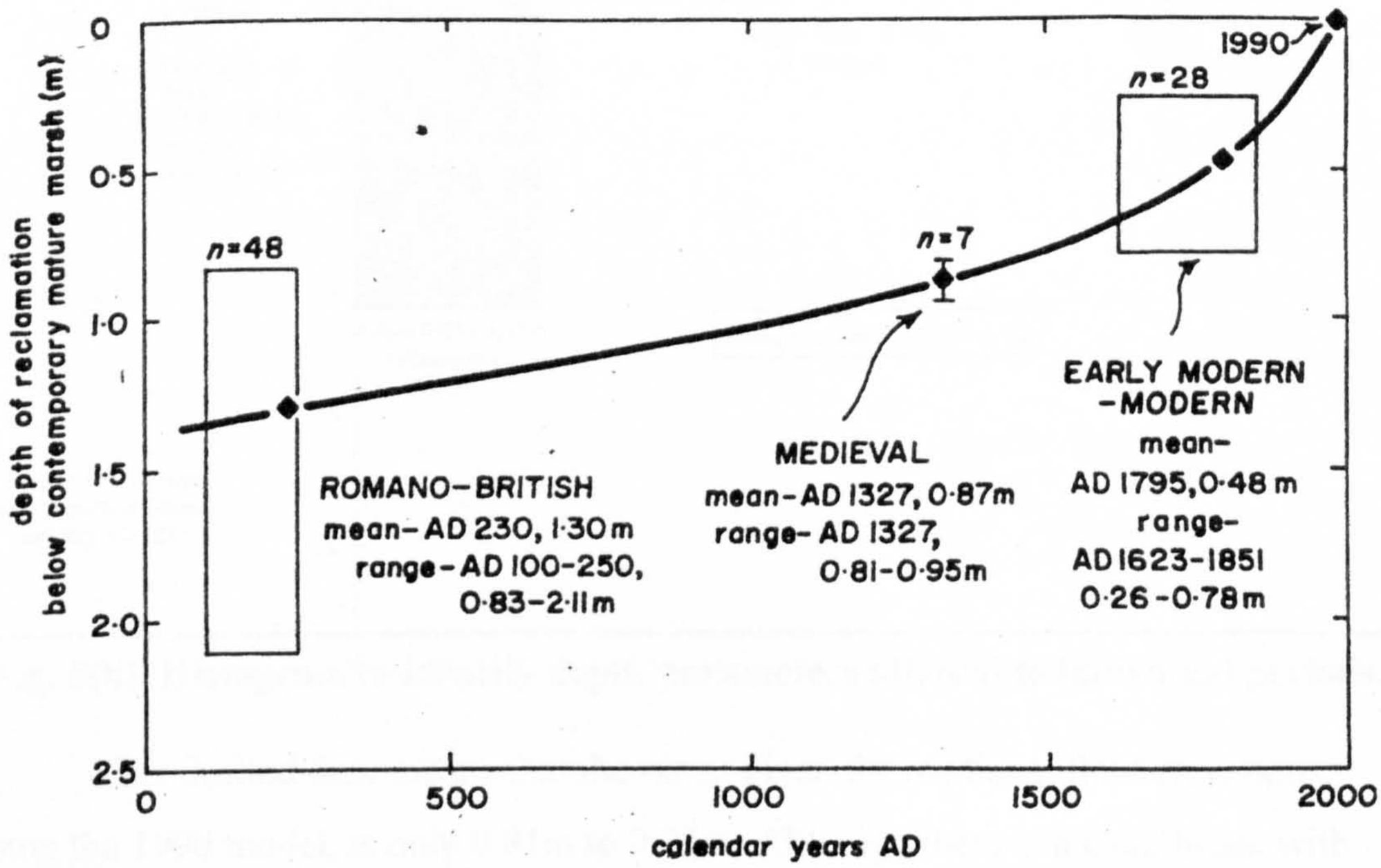
The existing evidence offered by Allen and Fulford and Hewlett produces two incompatible chronologies for the same area. Such a situation invites further investigation and a need for additional data to refine the hypotheses. Both chronologies suggest that human impact on the riverine landscape of the Forest appears to be consistently atypical, both nationally and within the Severn region, in spite of similarity of terrain and conditions suitable for exploitation. Such a hypothesis would contradict the tenet of this dissertation: that the Forest of Dean was not notably different from the rest of contemporary medieval society. If the majority of the riverine landscape remained unmodified during the medieval period, what factors influenced local society to make choices at odds with contemporary trends over such long periods of time?

Allen and Fulford's research was based on the eastern shores of the Severn with minimal work on the Dean side (Allen pers.comm.). This lack of data may suggest a reason for the conflicting theories regarding the Dean area. The author therefore undertook extensive surveys, using Allen and Fulford's original methods, to look for more detailed evidence from which to evaluate the reclamation of the Dean alluvium. Evidence for a landscape which had been reclaimed prior to the medieval period could affect the dynamics of contemporary local populations in settlement, economics and communications as currently perceived. Evidence for further, medieval, reclamation in a period where substantial amounts of reclamation took place elsewhere, would change the perception of Dean as 'different'.

Field work: models for analysis

The Allen and Fulford model for determining the date of a particular elevation is given as a rising curve from the Roman period to the present (fig.8a).

Fig. 8 Parameters of field elevation depths below the contemporary marsh as a means of dating them.



(a) Line graph of field elevation surveyed in 1990 in the Inner Severn Estuary showing the mean elevation date and range allotted to individual eras.

after Allen and Fulford, 1990(b)

In the research area of Longney the majority of the artefacts found in 1990 provided evidence to date the levels as Romano-British. The dating suggested that land surfaces for this era fall between the parameters of 0.83m to 2.11m below that of the current active marsh (fig. 8a). On the Dean side of the river, elevations which fall between such parameters are found at the peninsulae of Awre and Rodley. Only one elevation, (at Elmore), was dated to the medieval period. This dating was based on some twelfth and fourteenth century coinage and a surname of 1327 which was related to the adjacent settlement at Waterend. The authors did note a similar name in 1221. Although it could not be directly linked with this particular settlement, it did suggest a possible earlier dating (Allen and Fulford,1990b : 302). A single area of Dean corresponded to such an elevation; Hayden, to the west of Rodley.

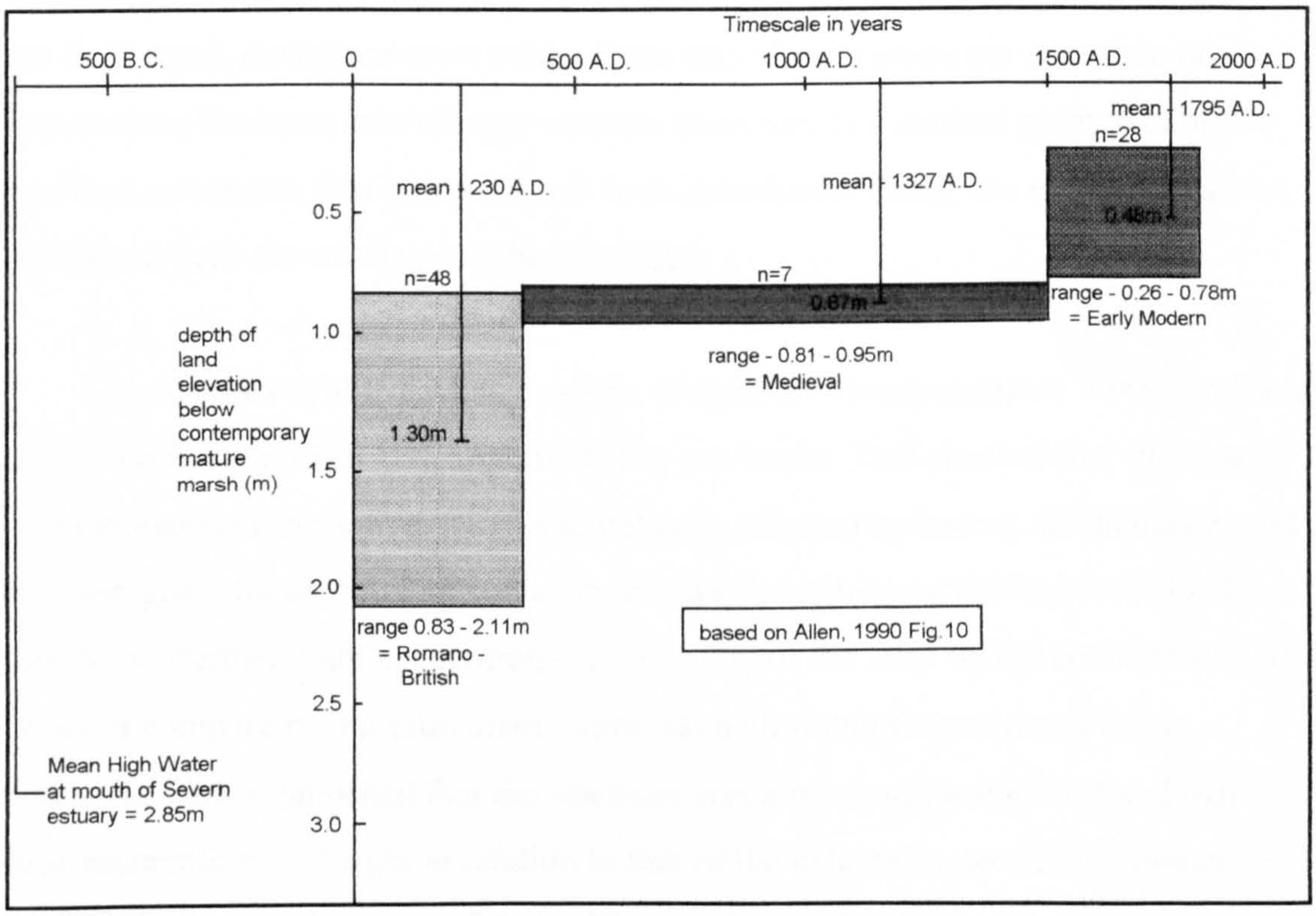


Fig. 8(b) Histogram to identify depth parameters allotted to individual periods.

This limited data means that the range given for medieval field elevations, using the 1990 model, is only 0.81m to 0.95m. Although there is a clear break with post-medieval/early modern elevations, which are given a lower limit of 0.78m, Romano-British elevations reach up to 0.83m. This gives a clear window of only 0.02m for the entire medieval period. Such a small figure over such an expanse of time would seem statistically unsound. This imbalance can be easily demonstrated by

re-organisation and presentation of the data (fig.8b). Application of the model must therefore be used in conjunction with other evidence, which may, in itself refine the dating of field elevations.

In her own work the author made surveying traverses, using the current active marsh as the base-line (fig.6) to establish the elevation of the fields. A dumpy level and siting poles were used to take a minimum of ten readings from each siting point along the traverse, avoiding any obvious anomalies such as gateways. Where ridge and furrow was present the number of readings was doubled, taking equal numbers of high and low levels and averaging the results. Where possible traverses were made in a direct line from the river to the beginning of the solid geology, or rising ground. In cases where either impenetrable hedges obscured visibility, or drainage ditches could not be crossed, deviations were made. Extra sets of measurements were then taken, approaching the same area along a separate trajectory to a marked point to compare readings and ensure that errors had not been introduced. Using this method a pattern of stepped field elevations could be identified.

At Cornham, above Minsterworth, comparative measurements were also taken across the Severn, to an area unprotected by sea banks. This checked that the base measurements of the active marsh had not been affected by known maintenance work, a reason given for incomplete survey in this area by Allen and Fulford (1990b). To satisfy any further doubts regarding the reliability of the local marsh environment, a series of comparative measurements were taken all round the perimeter of the peninsula. This established that the sea-bank was almost uniformly level and that measurements of its height in relation to that of the external, unprotected, marsh produced consistently similar figures. Measurements of field elevation based on the local contemporary marsh were, therefore, considered valid and are included in this dissertation.

Results of all the author's surveys in the inner estuary were compared with those of Allen and Fulford (1990b) to ensure the method was being applied correctly, though the latter appeared to have limited their survey to a single reading in the area

immediately behind the seabank. Below Lydney, the author could not ensure that her survey would be valid because of erosion and extensive earthworks in progress by the Environment Agency which disturbed the active marsh. Field survey results were therefore checked against a map, detailing elevation on a 50m grid, which was provided by the Environment Agency. The author has presented details of her research areas in two groups; the Inner Estuary (which offers direct comparison with the original research of Allen and Fulford) followed by the Middle Estuary, to which a different set of criteria may apply.

Awre

The 100ha.of alluvium at Awre were defined as a Roman reclamation in the 1990b model. Its peninsula lies on the proposed boundary between tidal and fluvial deposition processes (above) but is included as part of the Inner Estuary from similarity of topography. The author's own fieldwork was hampered by standing crops and a lack of recognisable active marsh along the southern shoreline. An independent series of measurements taken by the author established that fields were stepped towards the river from the central access to the alluvium, which ran east from Awre church. Field elevation differences between fields were small, in the region of 0.20m -0.30m and related to at least five levels. The numerical results have not been included within this thesis as they did not form complete traverses based on the active marsh. More detailed work would need to be undertaken to provide a comprehensive chronology.

With no active marsh it was impossible to verify the elevations published by Allen and Fulford (1990b:313-14 and Table 2). The 1990 conclusions are based on measurements taken in geographically restricted areas. Measurements were closely spaced across the southern shore of the peninsula with two sites at its northern end, but none in the extensive, outer alluvial areas of the point (fig.9). Although their elevation measurements varied by over 0.5m they were interpreted as a single, triangular reclamation inherited by post-Roman communities. Reference to medieval reclamation at 'Haywards' by the Lord of Awre in 1140 (Elrington and Herbert, 1972: 15) was dismissed in 1990 by its identification as 'Haywards Barn', an extant stone

ruin adjacent to the modern seabank in the southeast of the peninsula. It is an area known to have been extensively eroded during the thirteenth century and any reclamation there was assumed lost.

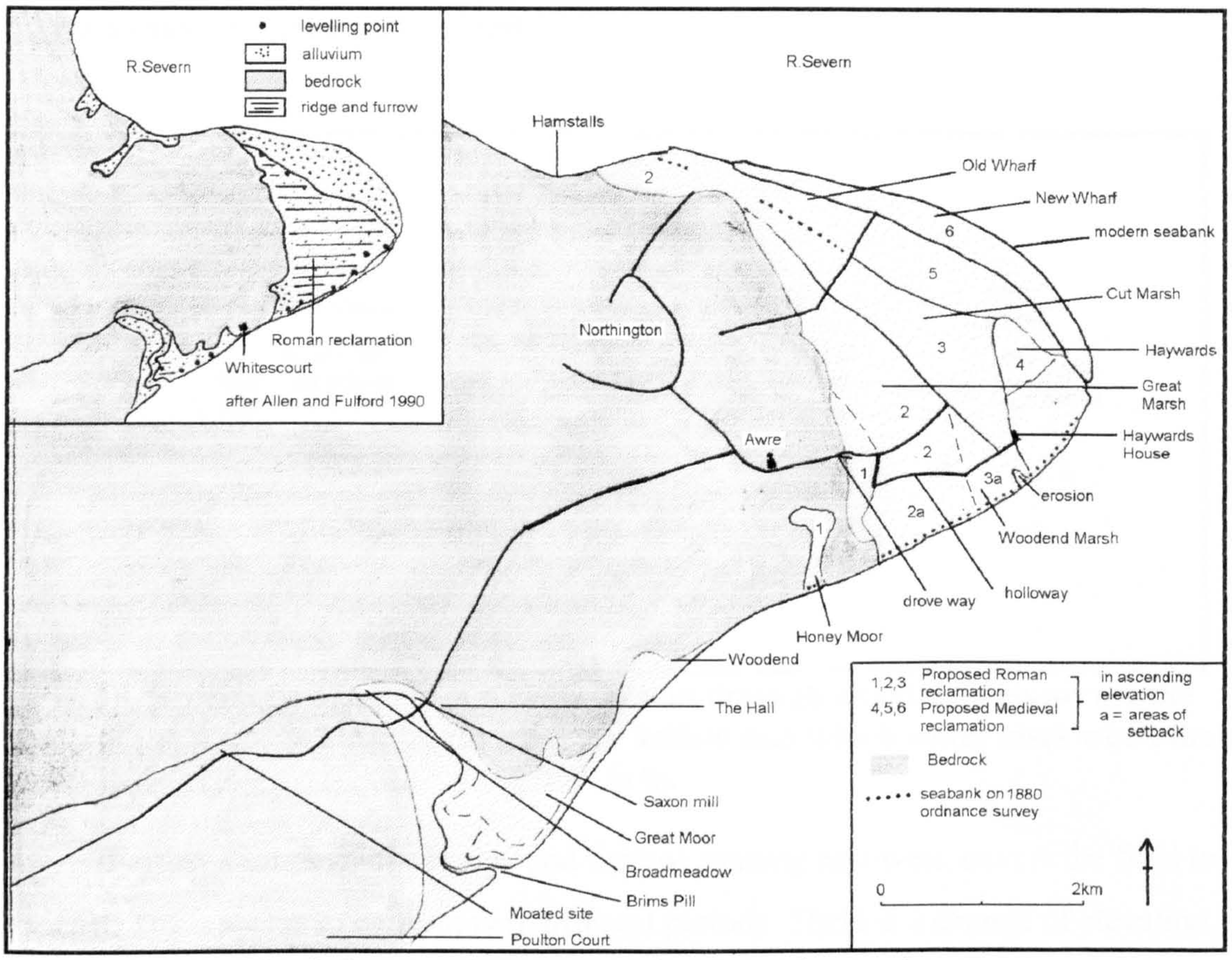


Fig. 9 Proposed sequence of reclamation at Awre.

Re-examination of Allen and Fulford's elevations, in conjunction with their relationship to solid geology, ordnance survey, tithe map, field work and documentary evidence, suggests a totally different interpretation (fig.9). Both ordnance survey and tithe maps illustrate a redundant seabank near the two northern measurements of the 1990 survey; it was documented in 1846 and survived into the twentieth century (Elrington and Herbert,1972: 15). Although elevations differed between 0.91m and 1.34m, the structure, and its significance in defining two separate elevations, was not acknowledged in 1990. In the south two elevations similar to the pair in the north - 0.83m and 1.37m - also occur next to each other. The deeper of the two relates to a small embayment, 'Honeymoors', below Awre church bounded on the tithe map by a dotted line representing a seabank: such a line extends to other areas of the peninsula

and it remains as a notable bank inside the current (nineteenth century) seabank. Rising ground to the east of Honeymoors does not have a seabank and may be considered as part of a spur from the hillside which isolates the 'Moor' from the rest of the alluvium. It is covered with ridge and furrow oriented towards the river, but now truncated by the current seabank.

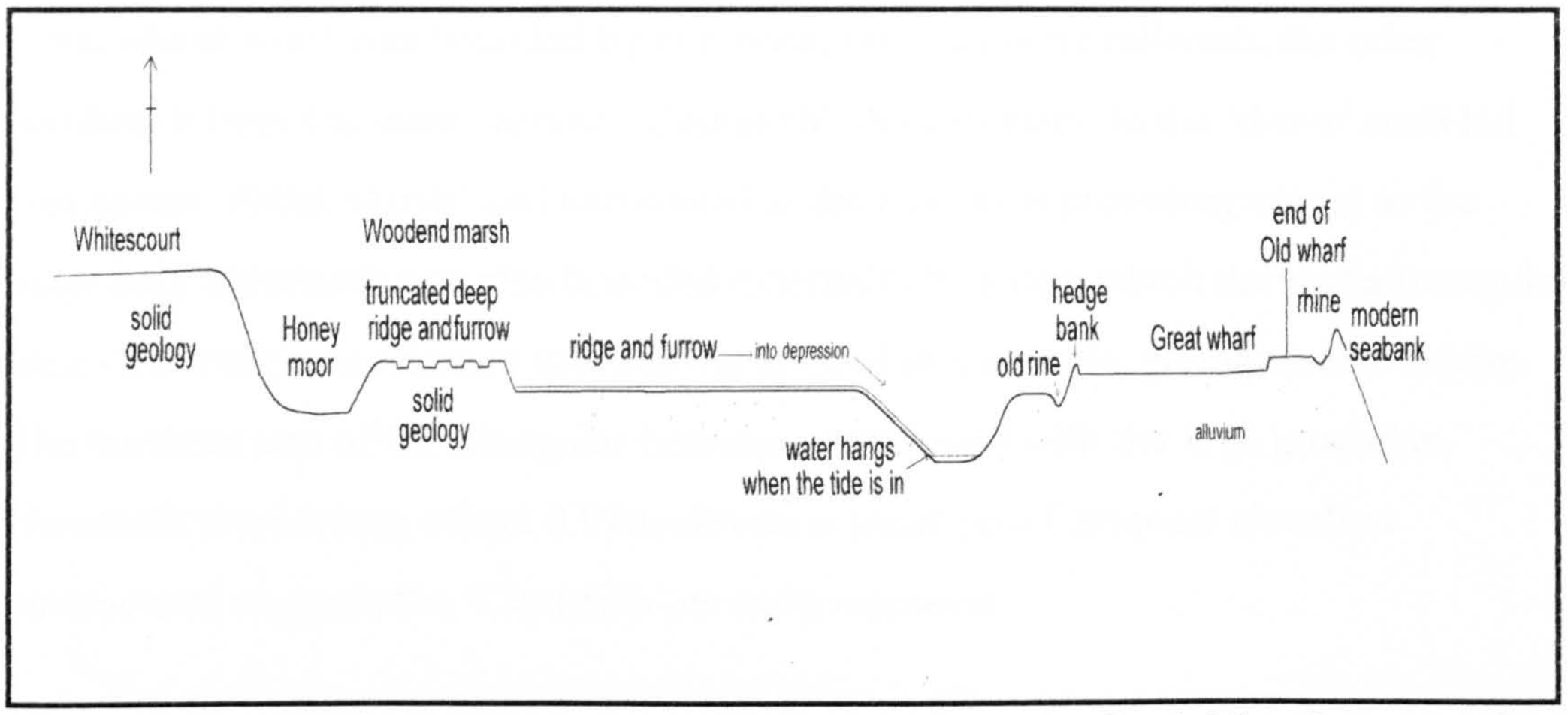


Fig. 10 Schematic diagram of a cross section through alluvial levels across the south of the Awre peninsula, showing the hollow into which water rises when the tide is in.

Further well-developed ridge and furrow, running east/west, covers the field to the east. This appears to be from two different periods. There is a change of elevation which corresponds to a change of direction in the hollow-way which marks the northern boundary of the ridge and furrow. The southeastern end of the field has a notable change of elevation, dropping c.1m into a deep depression which stretches over half the width of the field and is truncated by the sea wall (fig.10). The depression appears to represent the scouring out of the southern end of the rine and may represent erosion caused by a tidal inudation. One possible date is the thirteenth century: a major land loss was recorded for 1234. A contemporary law suit was brought by the men of Awre against Slimbridge (Cl.Rolls, 1231-4: 429). Slimbridge, whose landholding was increasing through deposition on the eastern Severn, was accused of stealing land from Awre. Continuity in the arable regime at Awre, seen through ridge and furrow running across into the hollow, suggests a date during the medieval period.

The field itself is c.0.30m higher than those towards the centre of the peninsula. A holloway leading east from the church gives access down to this wider area, known as 'Great Marsh' in its interior (fig.9). Its widened area at the base of the hill resembles the outline of a drove road. Great Marsh terminates at higher ground to the north near where a track leads out to the 'New Wharf' of the tithe map; this outer reclamation existed by the seventeenth century (Elrington and Herbert,1972: 15). Great Marsh itself was bounded by two rines, one removing hillwash, the other dividing it from the more easterly 'Cutmarsh'. An extension to the 'drove' road led east across 'Great Marsh' and terminated at the rine, as if providing access to the outer area. Cutmarsh was also bounded externally by a rine which defined a triangular area - the track was oriented towards the apex of this triangle, giving central access. The northern arm of the triangular boundary converged with the high ground at Hamstalls promontory where 0.91m elevation (near post-Conquest elevation parameters) suggests the 'Cutmarsh' as early medieval.

Access to the area beyond Cutmarsh was via the holloway which joined to the 'drove' way by a branch from the extension. The extant western end of the track is marked by a double hedge in a slight concave curve towards the river. At the eastern termination are the tumbled remains of 'Hayward House' beyond which lies the 'Old Wharf' and a field called 'Haywards piece'. Small elevation differences were found between Haywards and Cutmarsh. 'Le warthe ex alia parte Sabrina' belonged to Awre in 1300 (Berkeley Muniments: chart. 3513). This reference and application of 'The Old Wharf' to the adjacent field north of Haywards suggests that reclamation may have been two-fold, with the southern one the earlier. In view of an average rate of tidal increase since the Roman period of 0.10m per century the short time scale between such reclamations is unlikely to be easily identified through field elevation measurements.

'Awre Sand' was being used for cattle pasture by 1303 (Cal. Inq. vol.iv: 117-8) and again in 1319 (Berkeley muniments chart. 2293). The 'Long Reen' which separated Old Wharf (or Warth) reclamation from this outer area was silted by 1614, when the New Wharf was drained and enclosed (Elrington and Herbert, 1972: 15).

Old Warth would, therefore appear to be the final medieval reclamation. Access to New Warth was obtained by a single track from an area called Northington which had a further track to the northern portion of Old Wharth. Northington is surrounded by tracks on the tithe map and may represent the site of a 'lost manor'. Such a re-orientation of routes to the alluvium may suggest social and political factors, discussed in Chapter 3.

The variety of evidence all points to a multi-period pattern of reclamation. It produced a landscape which was divided into small, individual areas. Elevation levels suggest that 'Honey Moors' was one of the earliest. Roman remains found at 'Whitescourt' near this area provide dating evidence (Allen and Fulford 1990b:314). Honey Moor appears to represent a small reclamation made by barring tidal access to an area isolated by two spurs of land. Chronology along this southern area is complicated by episodes of erosion and inundation. Unlike the northern section, field patterns here do not suggest boundary lines which could have rooted seabanks to solid geology. The name 'Woodend' is applied to fields either side of the promontory occupied today by 'Court orchard' where a truncated track leads towards the river. It would seem likely that the similarly-named areas had some relationship, possibly united by a lost part of the medieval landscape. Archaeological remains of the outline of a medieval building and other cultural debris have been recovered from this area of the river by the Dean Archaeology Group (unpublished). Direct access to this area was maintained via the 'drove way' from the church.

To the west of the church roads lead to The Hall (Farm) and 14ha.of alluvium around Brimspill, known as 'Great West Moor'. Elevation, based on silted ridge and furrow, gives a medieval/early modern date (Allen and Fulford, 1990b:314). The location of a mill, designated as Saxon (SMR), the embanked Hall Farm, and the medieval open-field of 'Broadmeadow', which belonged to Poulton manor (Curry,1996:35) suggest the earlier dating. Taylor's map of 1777 (Chubb, 1912) shows an earlier route taken by the watercourse. Remains of a clapper bridge over a silted channel were removed by the farmer in the 1990s, though still remain on the bank (Pl.1). Further inland (SO 689 073) the author located and surveyed a truncated

moated site, illustrated on the tithe map (fig.11, Pl.2). The place-names and features suggest that this area of alluvium was reclaimed in the medieval period in common with the majority of the Awre alluvium.

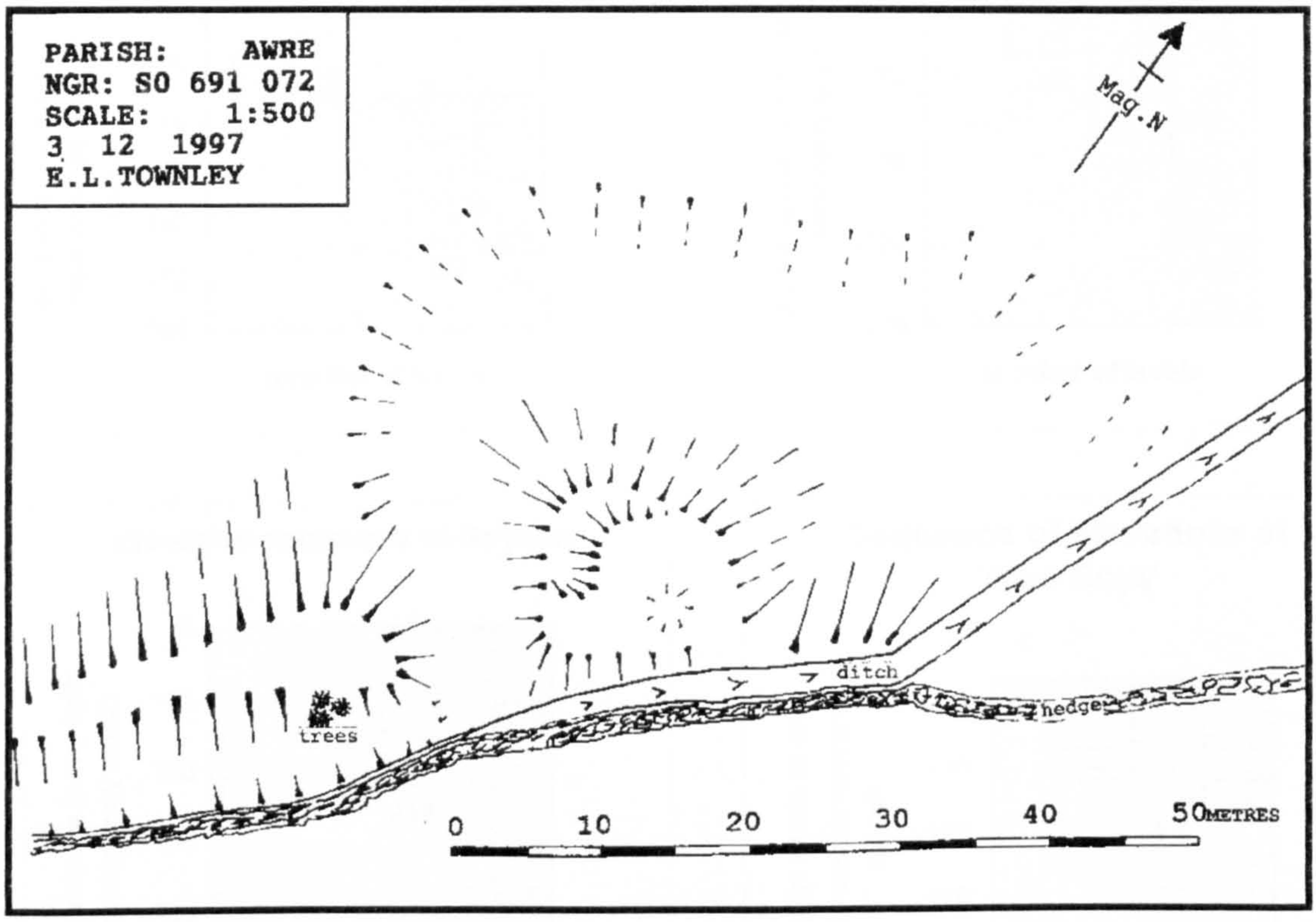
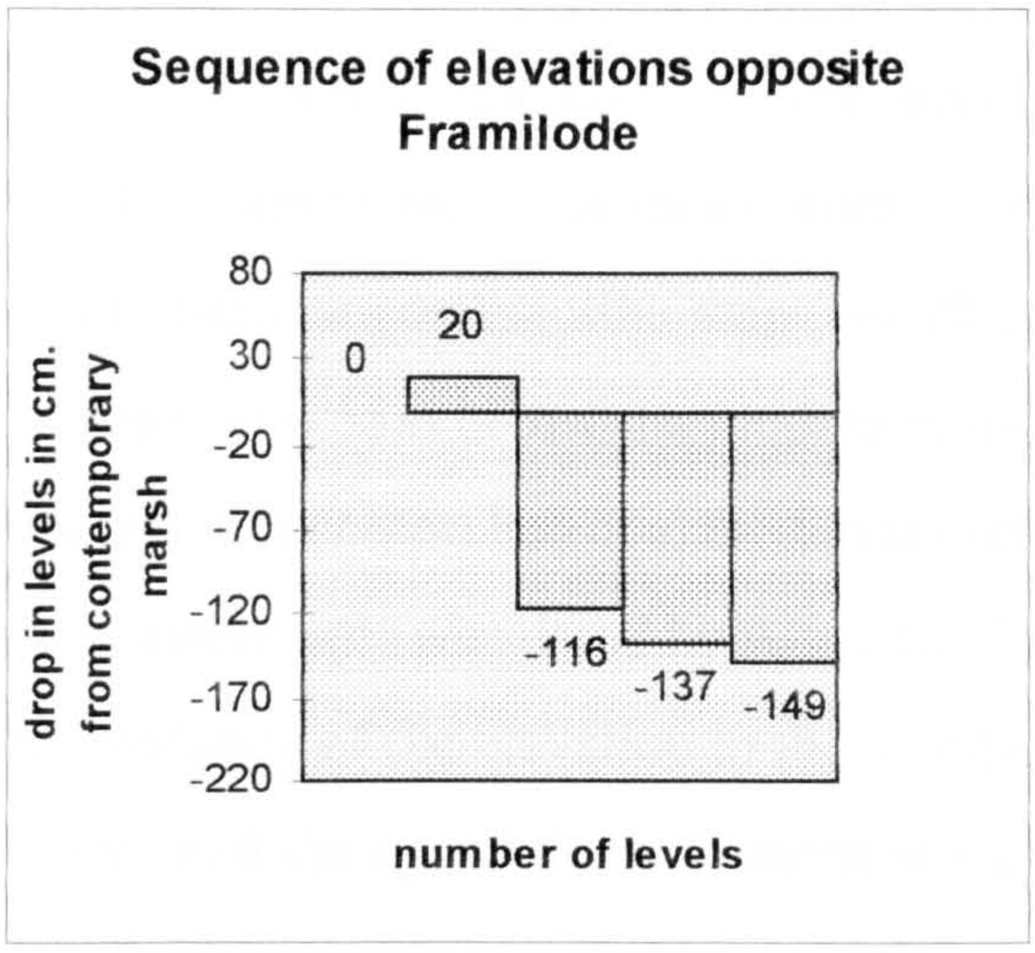


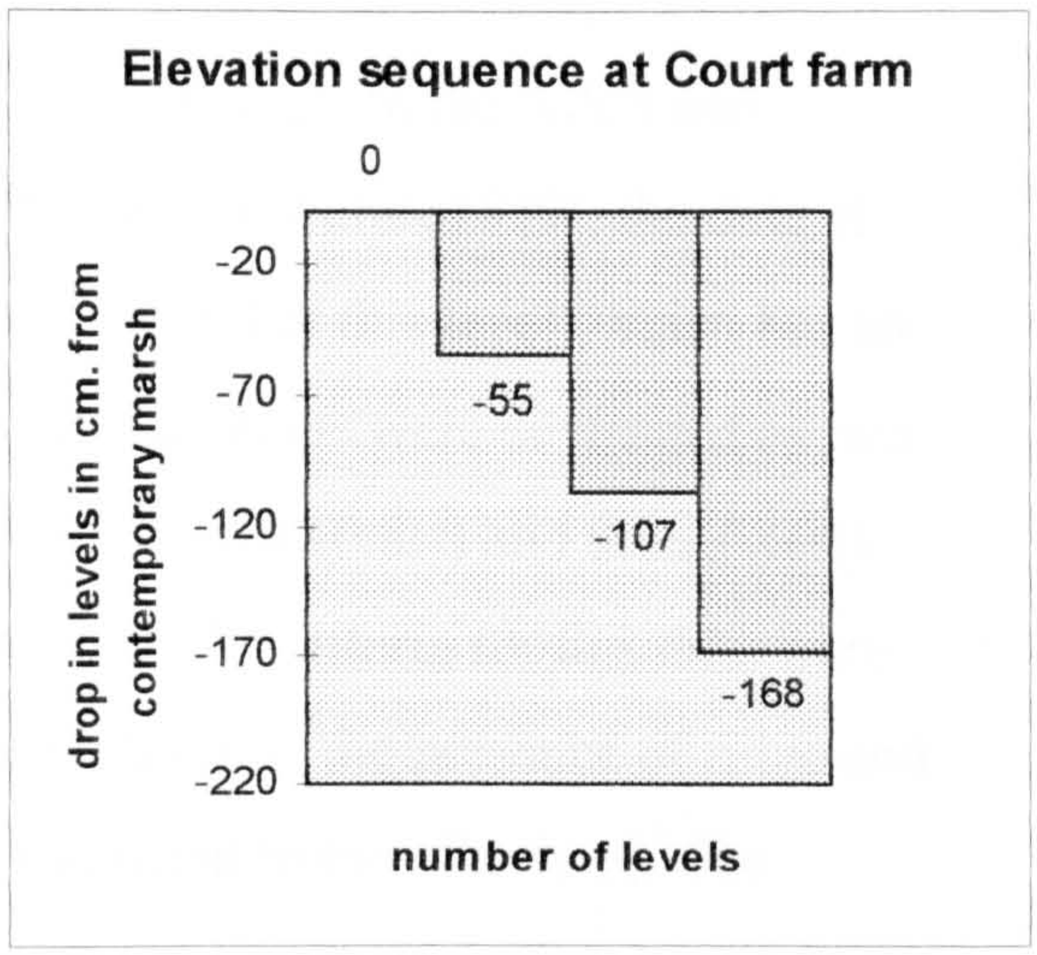
Fig. 11 Moated site at Little Box Farm, Awre.

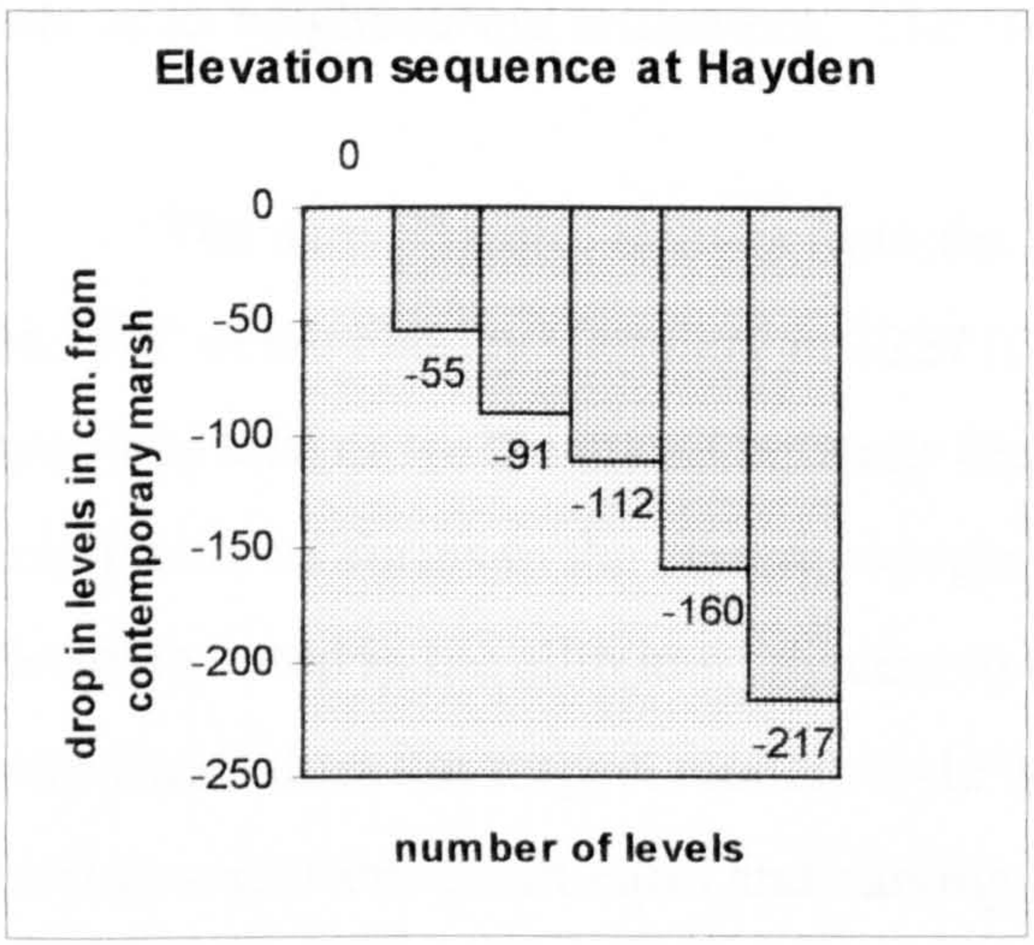
Field work around Westbury and the Rodley Peninsula

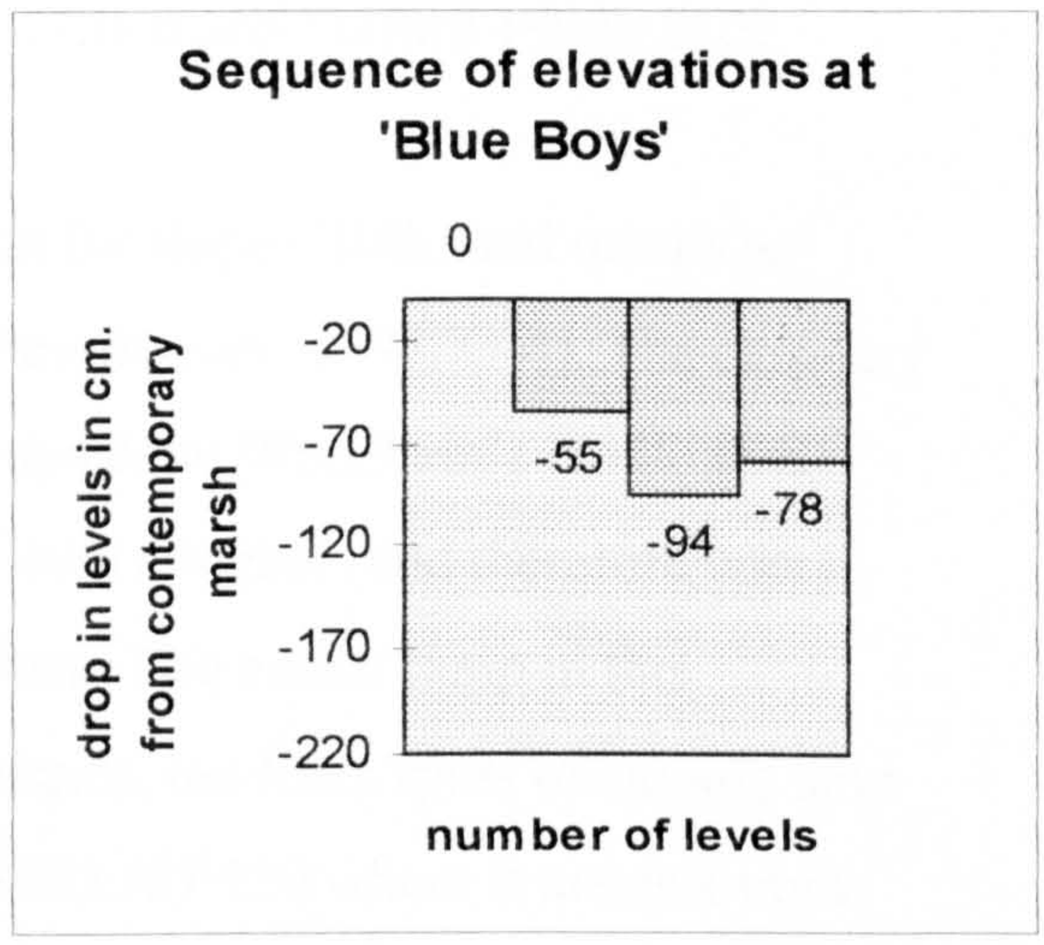
Field elevation surveys around the Westbury peninsula, by the current author (fig.6), produced results which corresponded to those published by Allen and Fulford (1990b: 297, 310-311). Agreement was, however, restricted to the modern river margins and in most areas the author recorded lower field elevations further inland (fig.12). Elevations at the peninsula agree with the Roman dating of Allen and Fulford (1990b: 297), giving a reclaimed area of 81ha. However, field elevation differed either side of the causeway which lead to the medieval river passage to Framilode. The northern area reached depths of 1.49m at Longmoor. Three elevation phases were noted, all within the parameters of the Roman period, moving outwards from a nucleus within the shelter of a shallow embayment and linking to a spur of land curving out from the northern bedrock (fig. 12).

Fig. 12. Elevation levels of the alluvium around the Rodley peninsula.









Elevations of 0.94m and 0.55m in the small reclamation south of the causeway suggests that it post-dates the northern phases. Well-defined ridge and furrow is extant to the south of fourteenth century Bury Court Farm. Results confirm a predominantly Roman landscape in the peninsula. The landscape is multi-period and does not demonstrate the uniformity proposed by Allen and Fulford; the individual phases involve much shorter lengths of embankment and therefore less input of labour than proposed in the earlier work (Allen and Fulford (1990b:310). The medieval community inherited an existing landscape and river passage. Opportunity for further expansion would have been constrained by the geography: the river is narrow here and the point lies opposite an area of bedrock which would limit any drift in the river channel.

To the west of the peninsula the solid geology forms a deeply indented shoreline, with both embayments confusingly called 'Wildmoor'. Today they lie behind an outer reclamation of 75ha. which unites both areas. In the Allen and Fulford paper (1990b) the reclamation is given the date of 'before1839', the date at which it appears on the tithe map (Gwatkin, 1993). Inland of this level (which has an elevation of 0.55m below the modern marsh) the embayments were envisaged as two separate, but comprehensive, medieval reclamations of 47ha.(east) and 90ha.(west). The western area was dated by Allen and Fulford to 1327. Criteria for this date were the similarity of the elevation to the dated one at Waterend , the presence of ridge and furrow, and the age of the settlement of Hayden (adjacent to the alluvium). The eastern embayment was designated as a seventeenth century reclamation, based on the date of its neighbouring settlement, 'The Heald' (Allen and Fulford 1990b:310).

The name 'Heald' derives from the Saxon for slope (Hlith) and occurs as 'Heilith' in the Flaxley Cartulary in 1227 (Crawley-Boevey, 1897:73-4). The cartulary describes land as 'in the marsh between Heilith and John Wodeham's land'. This description conforms to the current topography, with a higher (and therefore later) elevation noted in the alluvium adjacent to the farm. The extant ramp in this embayment does not respect modern field boundaries, but links spurs of sloping land running west from Court Farm and curving in to SO 737 120 where it meets a track leading to Boxbush. An extension to this track now runs along the western edge of the ramp, giving access from the Westbury/Rodley road to the outer, later reclamation. The straight route of this track avoids the final portion of the curved boundary, abandoned as a triangular depression in the present field near the road. Field elevations to the north of the road, into Wildmoor, provide figures compatible with those proposed for the Roman period; the lowest levels can be visually discerned by floodwater hanging in the winter (Pl.3). Wildmoor is drained by a small central drainage ditch which runs in an angular course and is bounded by a pattern of regular fields on the tithe map, suggesting a managed landscape.

Similar elevation sequences are found in the western embayment, supported by documentary and cartographic evidence. Although Hayden is currently dated to the

fourteenth century (Allen and Fulford, 1990b :310) earlier references to 'Heidun' occur in 1222 (Stevenson, 1893: Doc. 212) and 1227 (Crawley-Boevey, 1897: 73). The latter describes elements of the contemporary landscape: 'nine acres of land which lay between the sands of Rodley and the big road,' in another part of the road 'Heidun's arable land which lies inside the pill which comes from Wildmoor', 'selions which lie either side of the Vallam' (Crawley-Boevey, 1897:112-3). Additional corroboration can be found in an earlier charter from the Earl of Hereford to Osbert of Westbury in 1143-49 (GRO. PC 1054/5) giving him 'all new land on the sand of Heidun, from Hukkelei? to Framilode' for the increase of his fee'. It suggests that active management, or reclamation, began two centuries earlier than the current proposal.

The outer edge of the medieval level (0.91m elevation) is delineated by a ramp which runs westwards from the river cliff at Hayden. It is not, however, continuous to the next headland at Cleeve, as proposed by Allen and Fulford (1990b: 312), but returns to the Westbury/Rodley road avoiding the central pill. The present author measured a higher, and therefore later, elevation bordering the watercourse. This arrangement can be identified on an eighteenth century estate map (Merrett, 1785), which illustrates the redundant earthwork (seabank) with contemporary agriculture extended beyond this boundary (Pl.4). This, and a corresponding seabank on the western side of the pill, are illustrated on the tithe map.

The Westbury/Rodley road again marks an internal boundary to the elevation. North of the road the field elevation of 1.12m supports ridge and furrow, oriented towards the river. Inland, at the end of the ridge and furrow, a further drop was measured, again marked by an earthwork. This earthwork was a diagonal causeway linking spurs of higher ground (SO 730 125), and corresponds to a roadway shown on the eighteenth century estate map (Merrett, 1785). At 2.17m this inner elevation resembles that at Moreton Valence, which is suggested as being potentially Iron Age in date (Allen and Fulford, 1990: Fig.2, 304-9).

Like Rodley, the Wildmoors appear to have been reclaimed during the Roman period, or earlier. Seabanks, necessary for reclamation of these areas, would have linked the land spurs, and traces of abandoned metalling on the solid geology suggest that they may have formed part of a direct road from Chaxhill to the river crossing. A later route from Westbury also appears to have utilized the seabanks. Documentation suggests a period of deposition during the twelfth century which allowed individual reclamations in both embayments by the thirteenth century. Without some kind of a barrier near Westbury, the reclamation in western Wildmoor would have been flooded by water flowing through the valley behind Cleeve Hill.

Westbury

The present village of Westbury occupies a spur of solid geology, with lowlying land to its north, south, and east. The eastern valley, between Chaxhill and Cleeve Hill, links to the Roman levels in the Hayden embayment. Although no surveying was undertaken by the author in this valley, local farmers suggested the depth of the land by reports that flooding regularly reaches second floor level in properties on the valley floor (Pl.5). Such a field elevation would suggest that it had been protected from siltation at an early (Roman) date. Evidence for the remains of a seabank which would have isolated the Cleeve valley from flood waters may be found in a small earthen bank running north/south on the eastern end of Westbury recreation ground. This bank lies adjacent to a notable hump in the Westury/Rodley road at the junction with the road to Garne (Garden Cliff). By inference from the earlier examples, where seabanks were used for tracks, it would suggest that the earthwork and current road may represent a continuous seabank which again linked areas of higher land and originated from Chaxhill.

The 100ha. of alluvium south of Westbury village has a high elevation in relation to the current seabank. Examination of the eroding cliff outside the seabank reveals traces of buried soils and ridge and furrow, suggesting inundation and deposition. This renders surface survey for dating ineffective. The reclamation was proposed as medieval/early modern in 1990. However, a lease of 1197 (Crawley-Boevey, 1897: cart.60) relates to a meadow (Pulmede), lying between Garne and

Westbury church, while Garne, on the western edge of Cleeve Hill had tenements by 1250 (Stevenson, 1893: Docs.894, 442). These references suggest that the area east of Westbury Brook had been reclaimed by the twelfth or thirteenth century. A contemporary mill near Garne has always been regarded as tidal; the modern version is located on a mound above the mud cliff (SO 714 135). However, in 1778 (PRO. MR F17) Garne was located inland and would seem, therefore, to have been a conventional mill using the stream. In a flat landscape a peripheral location would enable it to utilize the steep drop into the river, in similar manner to the mill near the shore-line at Wembury, Devon.

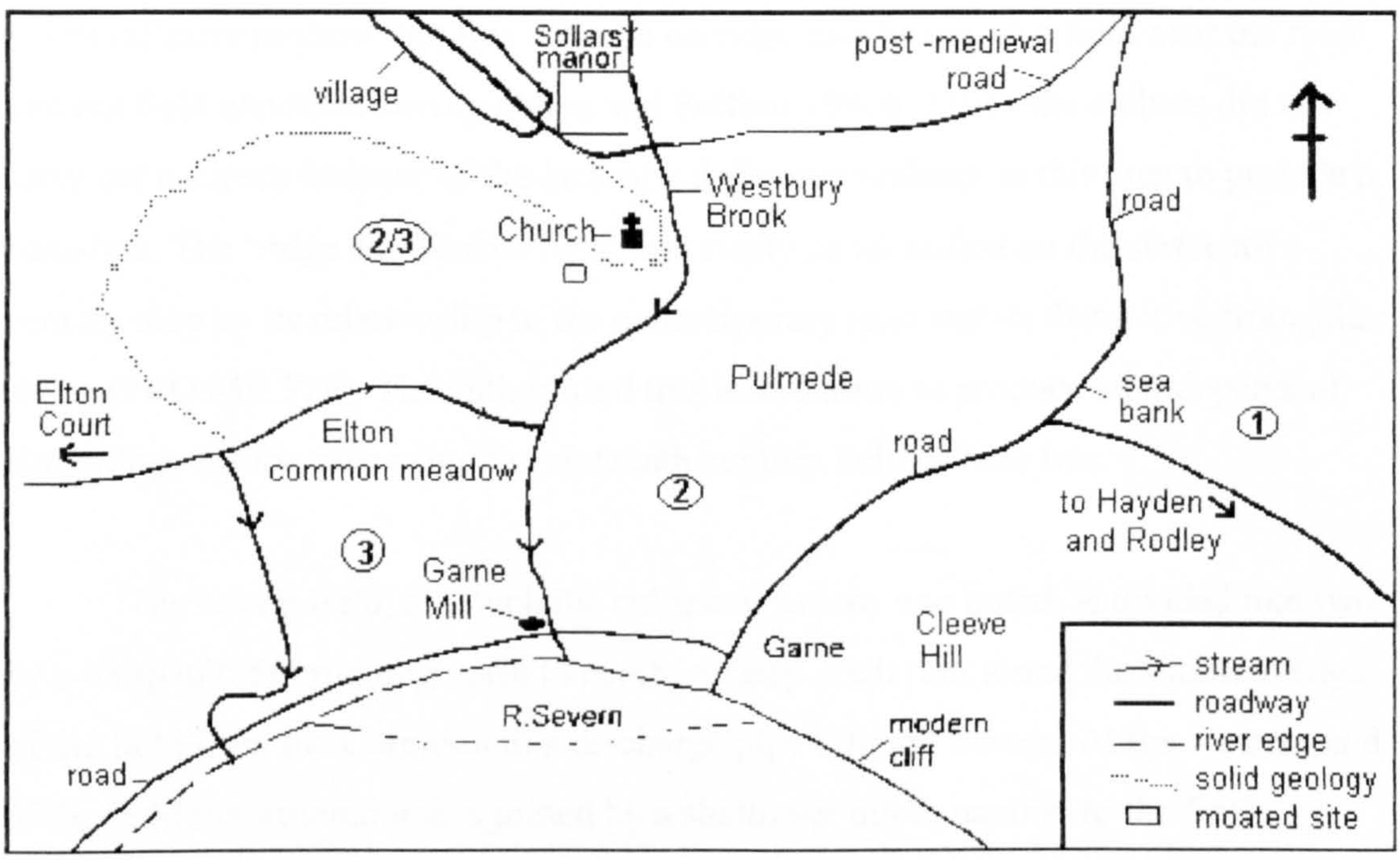


Fig. 13 Proposed sequence for the evolution of the Westbury alluvium.

In the eighteenth century the mill was linked to its hinterland by the Westbury road which continued past the mill to the river (fig.13). A section of road also headed west from the mill running some distance inland from the river and bounding 'Elton meadow'. A discontinuous section of track east of Cleeve is also illustrated in the eighteenth century (PRO MR F17) following the seabank into the Hayden embayment. Comparison of the 1775 map of Arlingham (GRO), with one of the Forest shoreline in the sixteenth century (PRO MR 379), illustrates a notable change of outline. The Arlingham peninsula appears to have extended northwards,

exaggerating the bend in the river which was a smooth 90° angle on the earlier map. There is no documentary evidence regarding the transition, but a disastrous tide which devastated the Arlingham peninsula, occurred in 1605 (Winters, 1700). It is possible that such an event may have initiated some change within the river, promoting erosion of the Westbury littoral and a loss of a former riverside route.

Walmore Common

A road northwards from Westbury via Adsett leads to Walmore Common. The common is a low-lying basin of 170ha. into which hillwash drains, and from which there is only a narrow outlet to the river. Current dating places its reclamation as medieval/early modern, but this is based on ridge and furrow in a field near the river and not field elevation survey (Allen and Fulford 1990b: 310) - the authors did not carry out a survey because of the lack of a definitive seabank in this area to provide a base-line. The 'ridge and furrow field' can easily be identified on the sixteenth century map by its relationship to the contemporary road and its distinctive triangular shape (PRO MR 379). The author used this information to produce an independent chronology for the area using the sixteenth century field as base line.

The extant field, in which the ridge and furrow was noted, is divided into two by a ramp of 0.5m running north to south. A deep ditch runs along the southern edge of the field from the Common to a discharge pipe into the Severn. At the western end of the field the watercourse is joined by a shallower ditch, parallel to the field boundary (former seabank) running from the northwest. At its northern end the ditch joins an earthwork which extends along the base of the northern hill-slopes, bordering the Common. The earthwork carries a ditch which carries both hillwash and a minor, slow-flowing stream from the western end of the common. Its elevation, above the low-lying fields of the Common, enables the water to discharge into the ditches of the outer fields (towards Doodles Bridge) (fig.14). The difference in height across the field boundary into the second field is 1.20m; the single greatest elevation difference noted during fieldwork. (Pl.6.) The watercourses which bound this second field form two sides of a triangle, joined by a further ditch which runs north/south. An early reference to drainage occurs in 1282, when a circuit of ditches bounded the Common

(Hart, 1987: 20). A reference to Flaxley Abbey's field as one of the boundary markers suggests that the area circumscribed stretched to Grange Court in the west. Not all the other boundary names can be identified, but Chaxhill was both beginning and end of the list (fig.14).

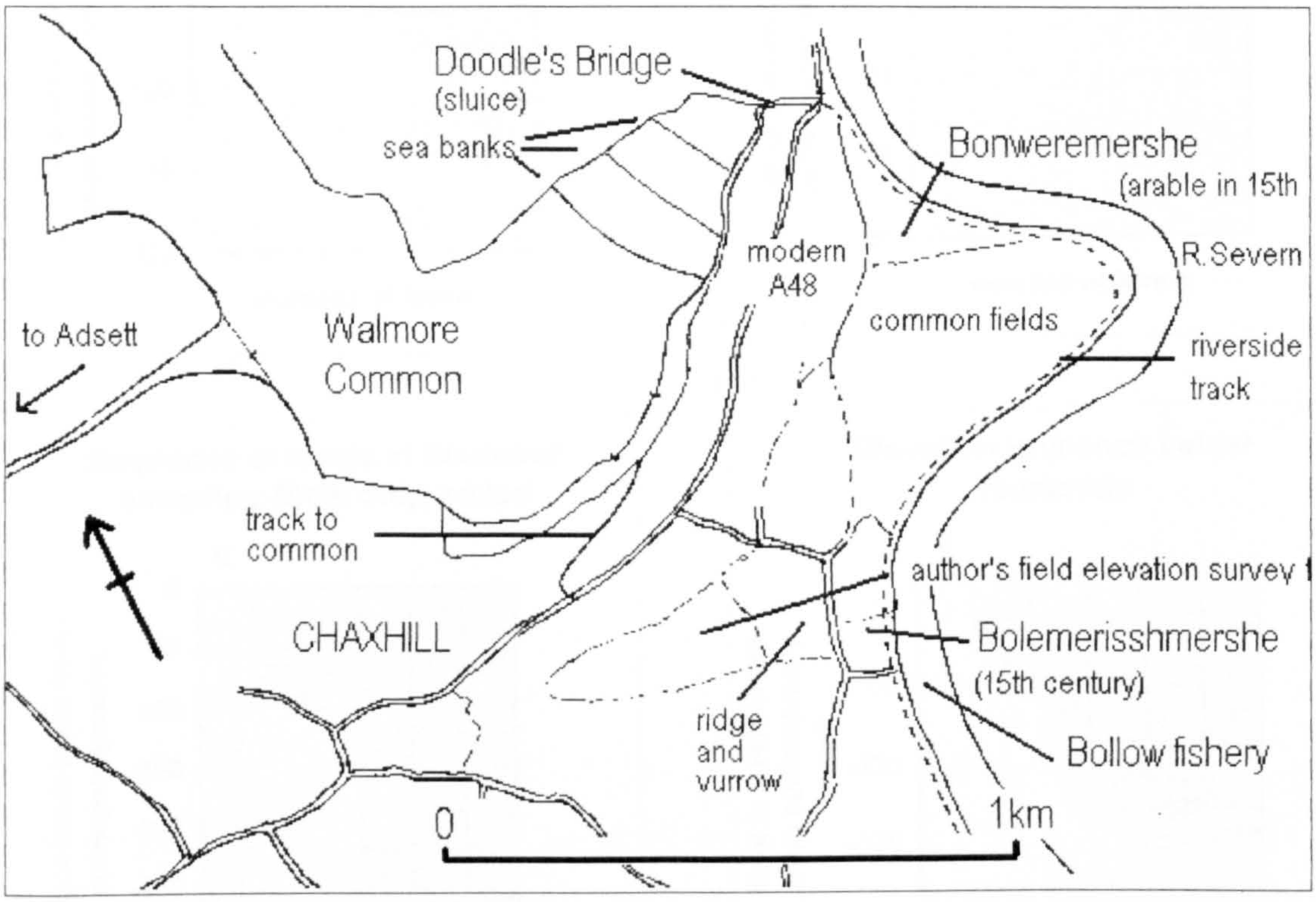
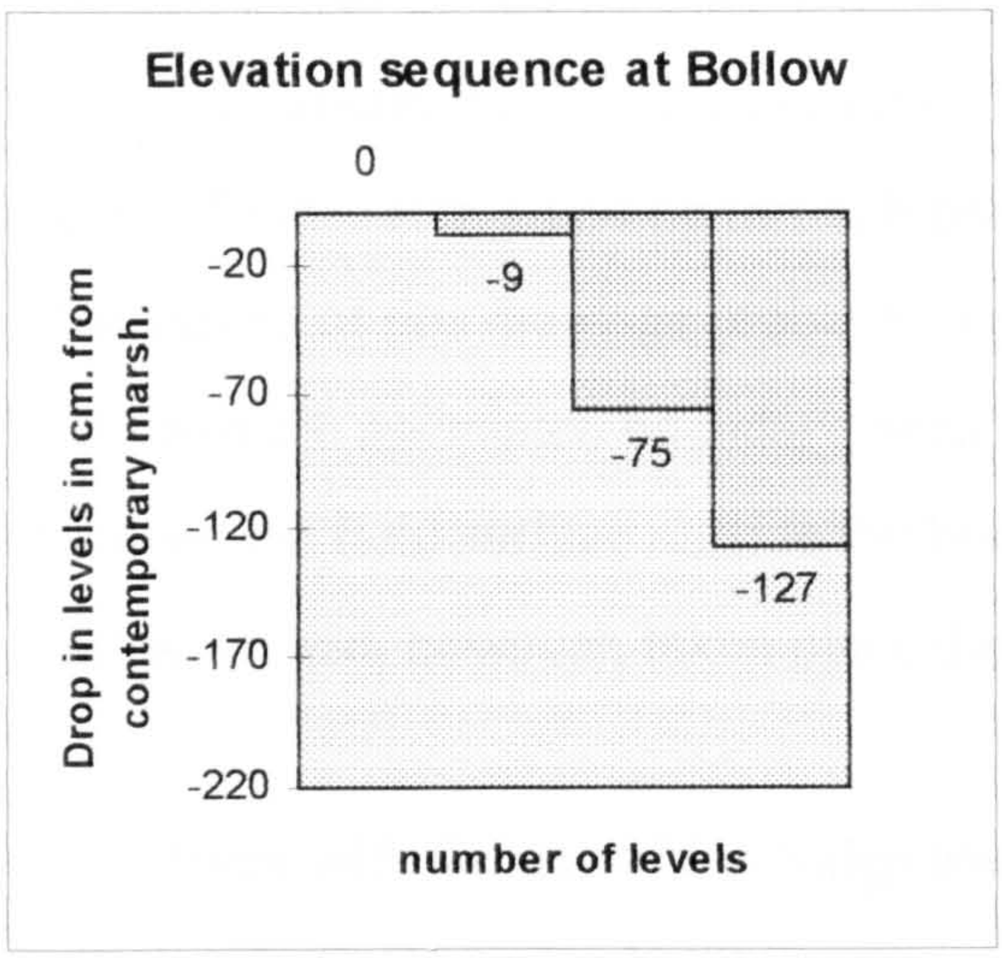


Fig.14 Reclamation in the area of Walmore and Bollow.

Two further shallow drops in elevation (Pl.7) were found within the triangular area (0.29m and 0.15m respectively) which gave an overall total depth for the Common of 2.15m below the sixteenth century field elevation (fig.15b). Removal of surface water from such depths would have become increasingly difficult and has not been solved by modern drainage techniques. The organisation of the watercourses may be seen as a changing response to this: initially a circuit of ditches could prevent hillwash flooding the basin and transport it, together with the water from the minor stream, via a single outlet into the river. This would involve minor technology for the two earliest reclamations, no more than a small gout. Further deposition and reclamation necessitated extension of the ditching system. The diagonal orientation of the third seabank suggests a deliberate policy to continue to restrict outflow to a single discharge point, still related to Chaxhill.

Fig. 15 Elevation levels of the alluvium in the Bollow to Cornham area.

(a)



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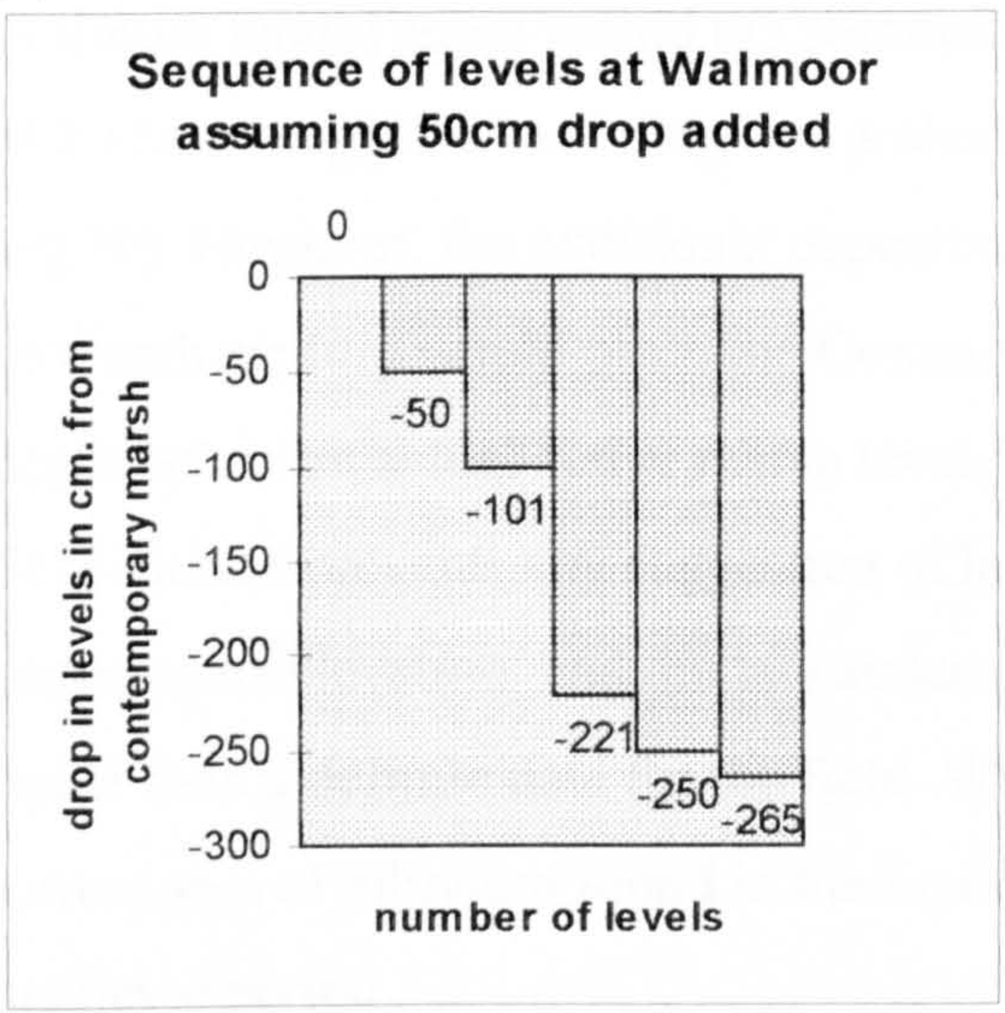

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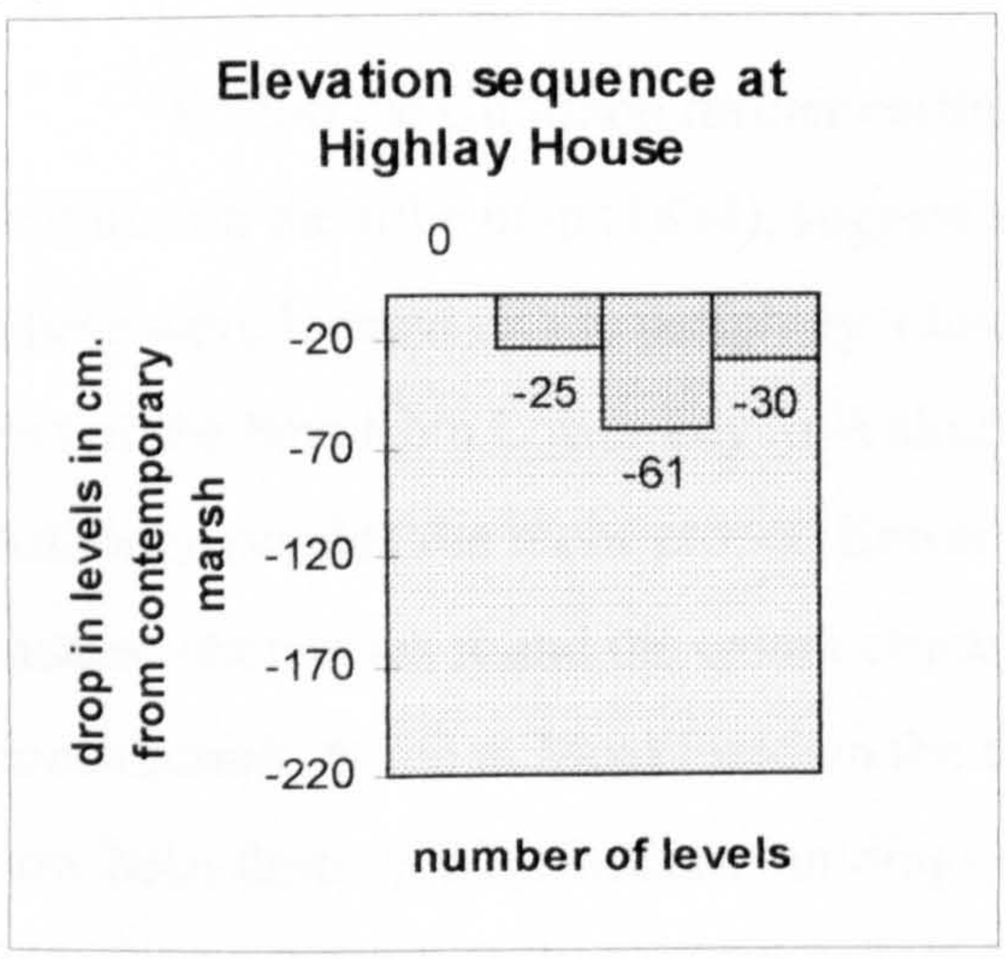

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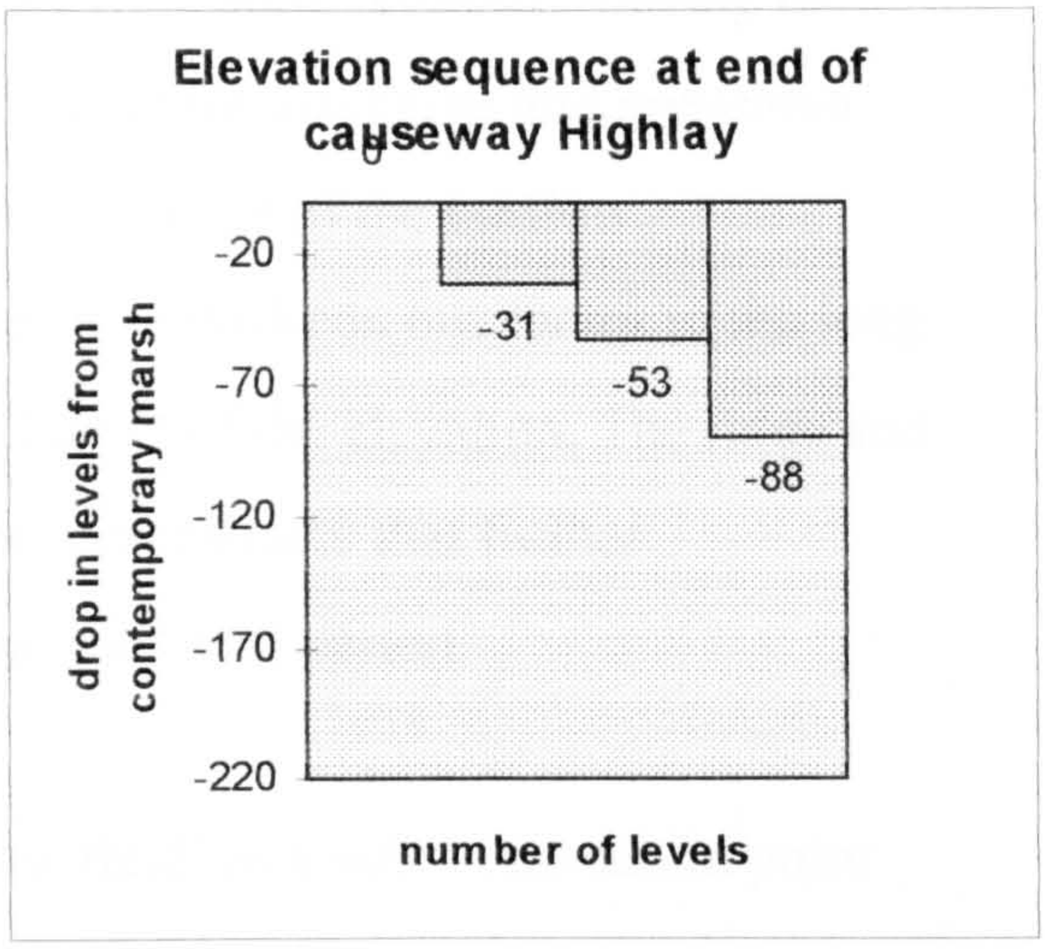

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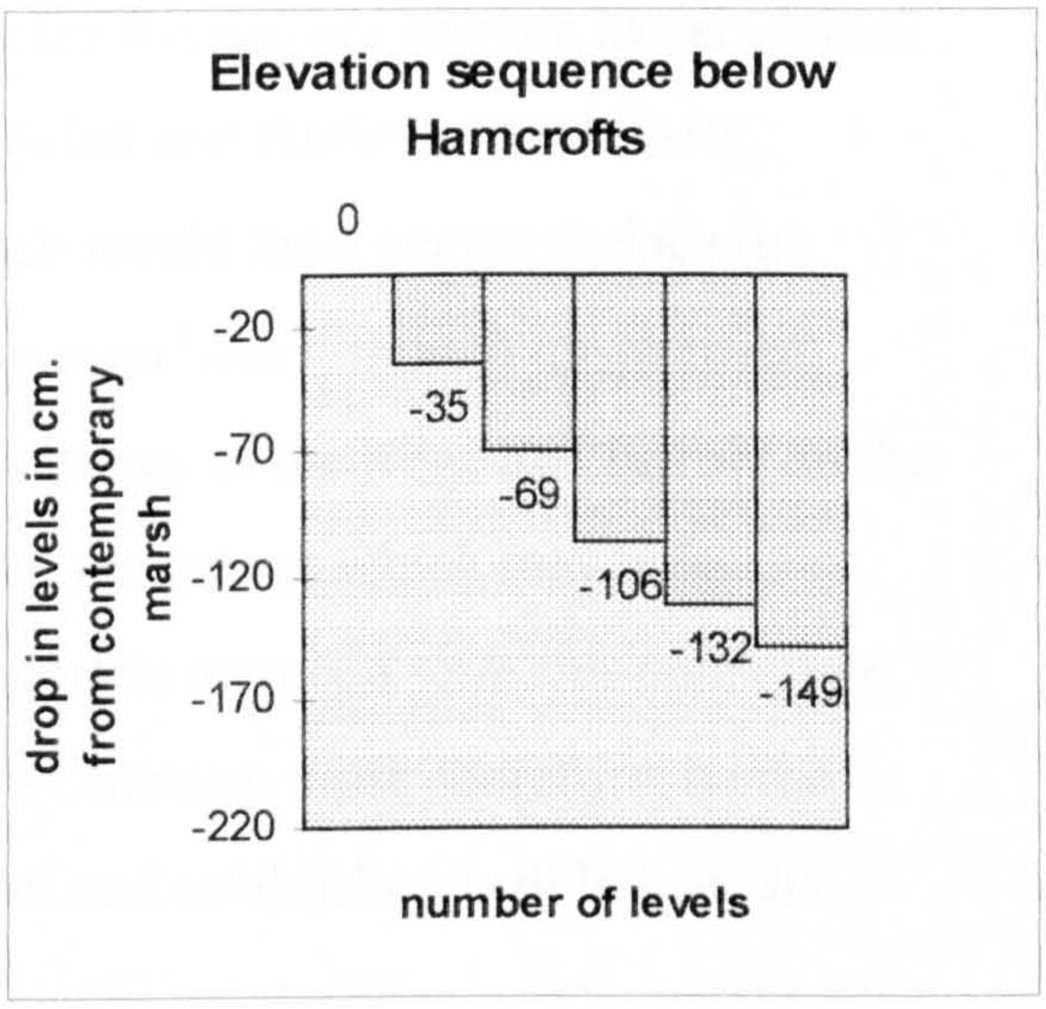
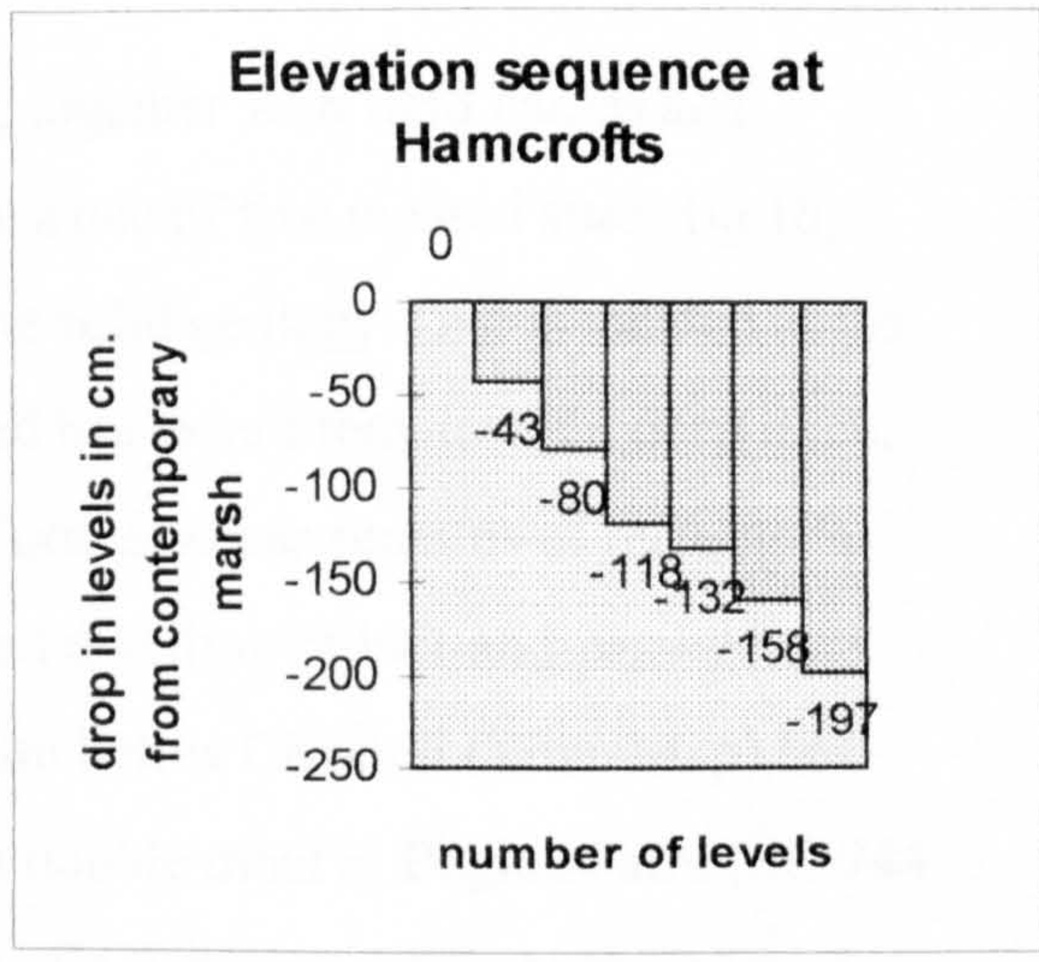


(f)



Rising tidal levels and associated active marsh would have meant that the opportunities for discharge from Walmore into the river were reduced. Raising the level of the stream would have extended the timescale for discharge and prevented internal, fresh-water, flooding through protracted blockage of the outflow. Management of this drainage problem may therefore have been one factor in the long duration of the associated boundary, seen in the height of the elevation. The ridge and furrow on the field surface outside the boundary demonstrates that further reclamation had, however, taken place during the medieval period.

Even with the use of the 'ridge and furrow field' as a substitute datum point for the current active marsh, all the area west of the major drop in elevation at Walmore would come within the parameters for the Roman era or even lower: a level of 2.11m is suggested as being late prehistoric (Allen and Fulford, 1990b: 319, Fig.10). However, the additional deposition which would have accreted since the sixteenth century would place the Common at an even lower, though unspecified, depth below an actual active marsh level. The presence of the ridge and furrow on the field surface prevents any suggestion of later tidal incursions which may have distorted its elevation, and the late sixteenth century is merely a terminus ante quem, rather than a definite date for the field. Walmore Common must, therefore, be the lowest area of alluvium found in the Inner Severn and established well before the medieval period.

Within the Common further earthworks, together with field names and features on the tithe map (1834), suggest the presence of five moated sites (fig.16). These were located on the periphery, close to the solid geology. One is located at the end of the lane from Lower Ley to Walmore, and has extant remains of a deep ditch. Although outside the moor proper, Lower Ley Farm also has remains of rectangular moated enclosures round the extant cruck framed dwelling of hall-and-passage construction. A site at Moat Field on the alluvium below Chaxhill (Tithe Map) has now been destroyed by modern buildings, and a double moat at Bagloe Farm (SO 744 163) is now partly used as a slurry pit. Remains of a further moat lie to the west of Morwents Farm (SO 728 152).

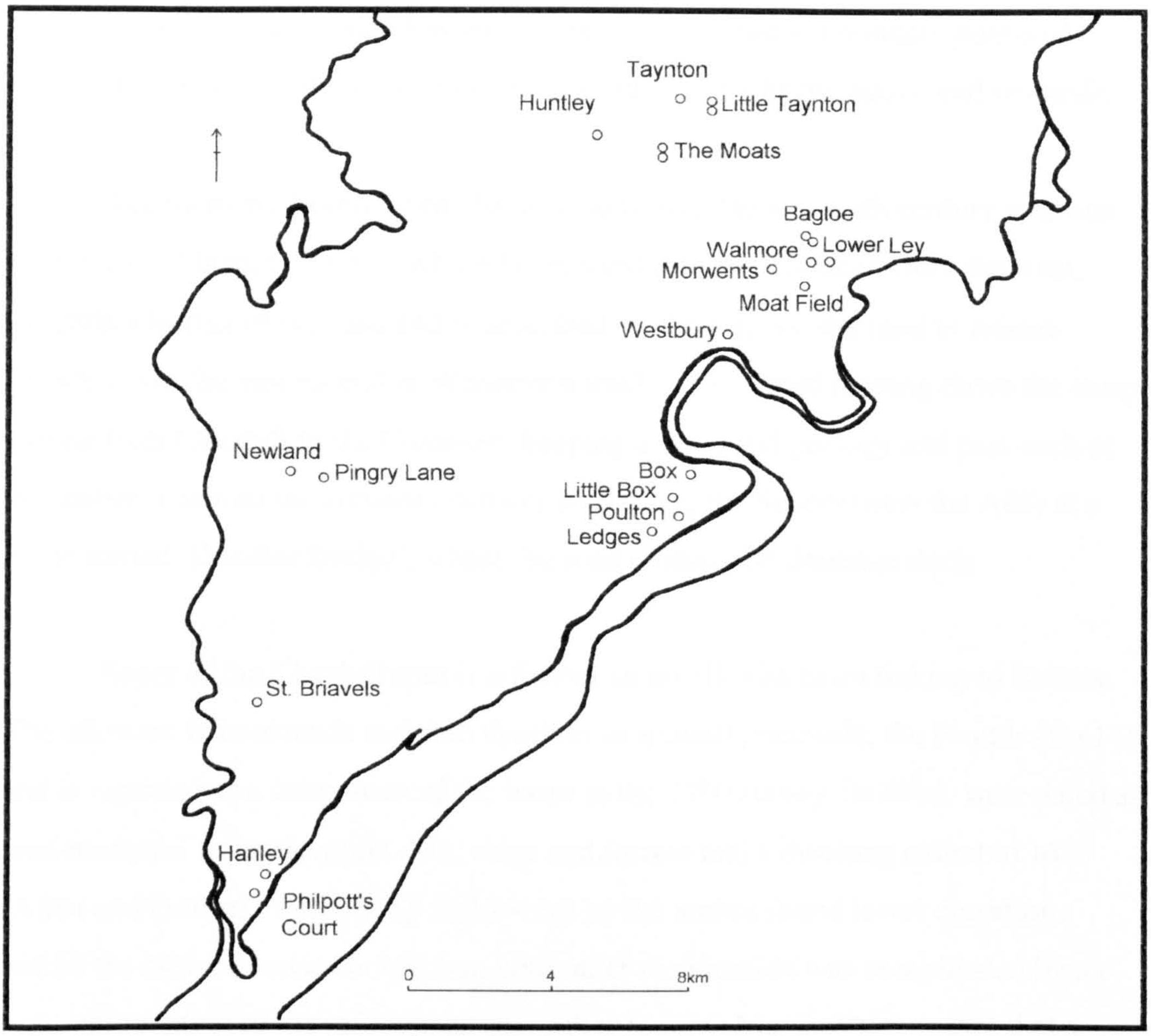


Fig.16 Distribution of moated sites

Although moated sites can symbolize status, particularly during the thirteenth century, their presence here may be a practical response to drainage. Flooding was a problem in the thirteenth century - the 'Regard' of 1282 (a contemporary local survey) was unable to be completed because Walmore was under water. Although no details were given, the 'Regard' does, however, record the existence of purprestures (illegal structures) within the Common. These may relate to the moated sites: none has been positively dated, but a coin of Henry II, still in the hands of the owners, was found at Lower Ley Farm. The Regard describes Walmore Common as 'pasture land, in the Bailiwick of Abenhall' (Hart, 1987:19). Ralph of Abenhall had a six acre meadow, the same amount as Flaxley's *newmor* meadow (Hart, 1955: 20). The Abbey had other un-named meadows within the pasturage, part of a gift of two hundred acres of meadow and pasture 'from the King's [Henry II] own assarts', with Henry III adding two acres (Crawley-Boevey, 1897: 17-18,37). Active, but small, land claim is implied in the Regard by a reference that the Abbot had recently 'extended his ditch' -

to the amount of ½ acre. Meadow names are also included as boundary points of Walmore: *Huntmede*, *Brodemede* (Flaxley's), the King's haymeadow, and *snymede.*

Access to the Common can be seen both from the sixteenth century map and from the field layout. A track, which funnels out into the Common from the west, suggests a former drove road and is described on the map as 'the road to Adshit (Adsett)'. On the eastern end of Walmore a track is illustrated running down the steep incline from Chaxhill to the Common, keeping to the solid geology and past each of the seabanks to join the sixteenth century road along the Severn (now the A48) at a place named 'Doodles Bridge', where the road crossed the drainage ditch.

South of the Chaxhill spur is a further small alluvial basin linking to Bollow. The alluvium here extends east into the river as a small peninsula, the Noards (fig.14) and is regarded as a continuum of the basin in the 1990 survey: its 47ha. were dated as post-medieval from elevation data, ridge and furrow and a dwelling extant in 1623 (Allen and Fulford,1990b: 311). Field-work by the author found lower elevations within the basin. Precise comparison with other reclamation was complicated by an apparent re-siting of the refurbished seabank at Bollow Marsh which meant that a similar elevation was recorded either side of the structure. An earlier setback can be seen on the tithe map, with truncation of the strip fields (1841). Elevations using the available elevation as datum will, therefore, be low in comparison with a lost active marsh, but a drop of 0.84m suggested an early medieval date for the field. A further drop of 0.52m was measured across the roadway from Rodley, giving a total of 1.27m into the basin and a Roman date for the field.

Earthworks were noted in this inner field (Little Moor); shallow ditches formed a grid leading to a larger one in the manner of 'ridge and vurrow'. The latter is a method of field drainage using spade-dug gullies. They appear to drain meadow and are dated to the late Saxon period in the Somerset Levels (Rippon 1997: 19, Fig.4). Similar drainage was noted, by the author, in western Wildmoor, also on the inner (Roman) elevations. In the outer peninsular area of this alluvium field names of *littlemore, bolemerisshmershe, hynewereshmershe, hallwardismershe and walmore*

were recorded in the fifteenth century (Stevenson, 1893:doc.1068). Although *littlemore* is described as meadow *bone*weremershe, on the outer margins of the promontory, was arable in 1430 (Williamson, 1893:doc.1095). This would provide an earlier date for alluvial reclamation in this area than that currently accepted by its comparison with Waterend (Allen and Fulford, 1900b: 311). The erosion of Bollowmarsh (*bolemerisshmershe*) and a similar setback of the seabank at Bunweir demonstrates that the medieval reclamation was more extensive than suggested by the modern landscape.

The northward extension of the Rodley road was used as a dating medium for the Clay Hill and Oakle Street alluvium further upriver. This reclamation was given a medieval/early modern date because of the presence of ridge and furrow and a drop of 0.75m across the (modern) road to a 'probably immature marsh' (Allen and Fulford, 1990b:304); the author's survey confirmed these measurements. The sixteenth century road took a different course to the modern one, running up over Denny Hill (PRO MR379) across to Clay Hill, to Duni and then to Minsterworth, linking the spurs of higher land (fig.16). This former route is extant at the inland end of the field as a slight causeway with an arched stone bridge still *in situ* across the stream. If patterns observed downriver were repeated it would suggest that this route marked a former seabank whose integrity was preserved by this use. Subsequent flooding and deposition episodes could obscure phases outside such a seabank and suggest an apparently late reclamation. However, the area is small and would offer little return for the effort.

Minsterworth and Cornham

Minsterworth lies on a spur of high ground with some ridge and furrow on its alluvium near the river. It was not mentioned at Domesday (fig.17). Reference to alluvial areas in 1250 note five acres of meadow given to St. Bartholomew's Hospital, Gloucester: three of the acres lay in *stanilade* and two of these specifically mention the river as a boundary, two others, near the meadow of *de ernals,* were in an area called *newlond,* a name suggestive of recent reclamation (Stevenson, 1893. Doc.457). Although no technical survey was undertaken along this shoreline, observation and

field patterns suggest a lateral sequence of reclamations, with the earliest adjacent to Mortun Farm, mentioned at Domesday in the ownership of Gloucester Abbey. The earliest seabank simply surrounded a small area of land near the farm and joined into the spur of Cornham (fig.17). A second one ran from a second settlement 'Calcott's Green', also joining to the spur and necessitating a right angled turn in the drainage ditch of the first reclamation. This now ran along the base of the incline before disgorging upstream. The third reclamation spanned the area between the second and solid geology, now occupied by Minsterworth church. There are minimal differences in elevations, which suggest that they were all of the medieval period.

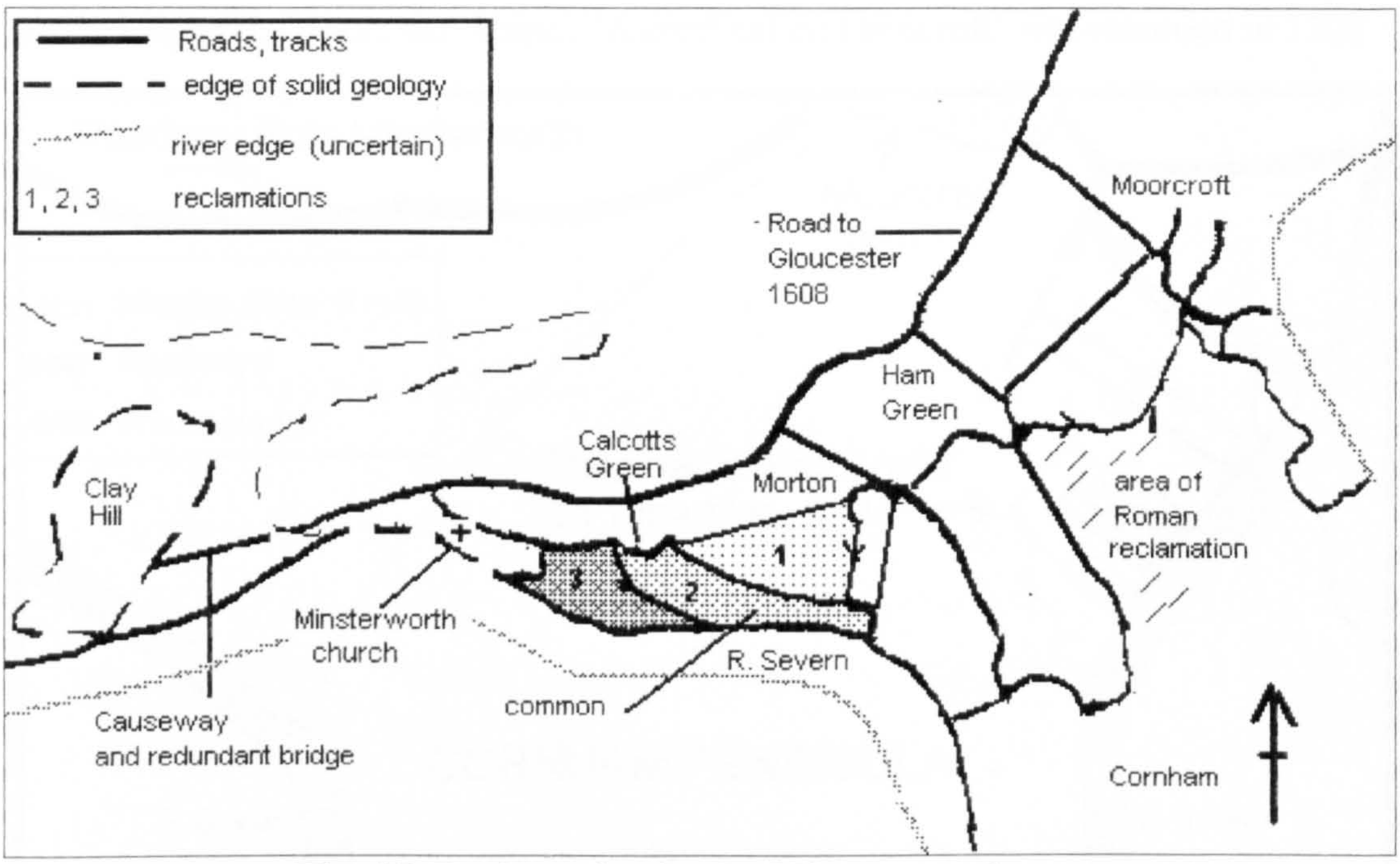


Fig. 17 Reclamation in the Minsterworth area.

The lateral sequence is based on field observations, documentary evidence, tithe map and PROMR 379 (1608)

The 260ha. of alluvium from Over Bridge and the Cornham peninsula were not comprehensively surveyed in 1990. Concerns regarding recent interference with the active marsh restricted measurement to only the southern portion. No ridge and furrow was noted and reference was made to documentary evidence in 1318 referring only to water-meadow. This led to a conclusion of 'before 1830' as the date of reclamation (Allen an Fulford, 1990b: 302, Table 2). The current author observed ridge and furrow over large areas, and cartographic evidence (PRO MR 397) illustrates a sixteenth century riverine outline similar to that of today for the

peninsula. Field divisions, a distinctively-shaped drainage ditch and a branching road system were also illustrated on the northwesterly margins of the peninsula (fig.18). Although the fields are truncated by the modern sea-wall on their eastern end, all the features can still be identified as extant earthworks, found by the author. They lie to the west of modern Moorcroft Farm in an area named as 'Hamcrofts' on the tithe map.

Domesday Moorcroft was described as the 'manor of Murcot in Longbridge Hundred', a manor which had increased in land value between 1066 and 1086 and also belonged to Gloucester Abbey. 'A croft called Hamcroft' was recorded in 1200

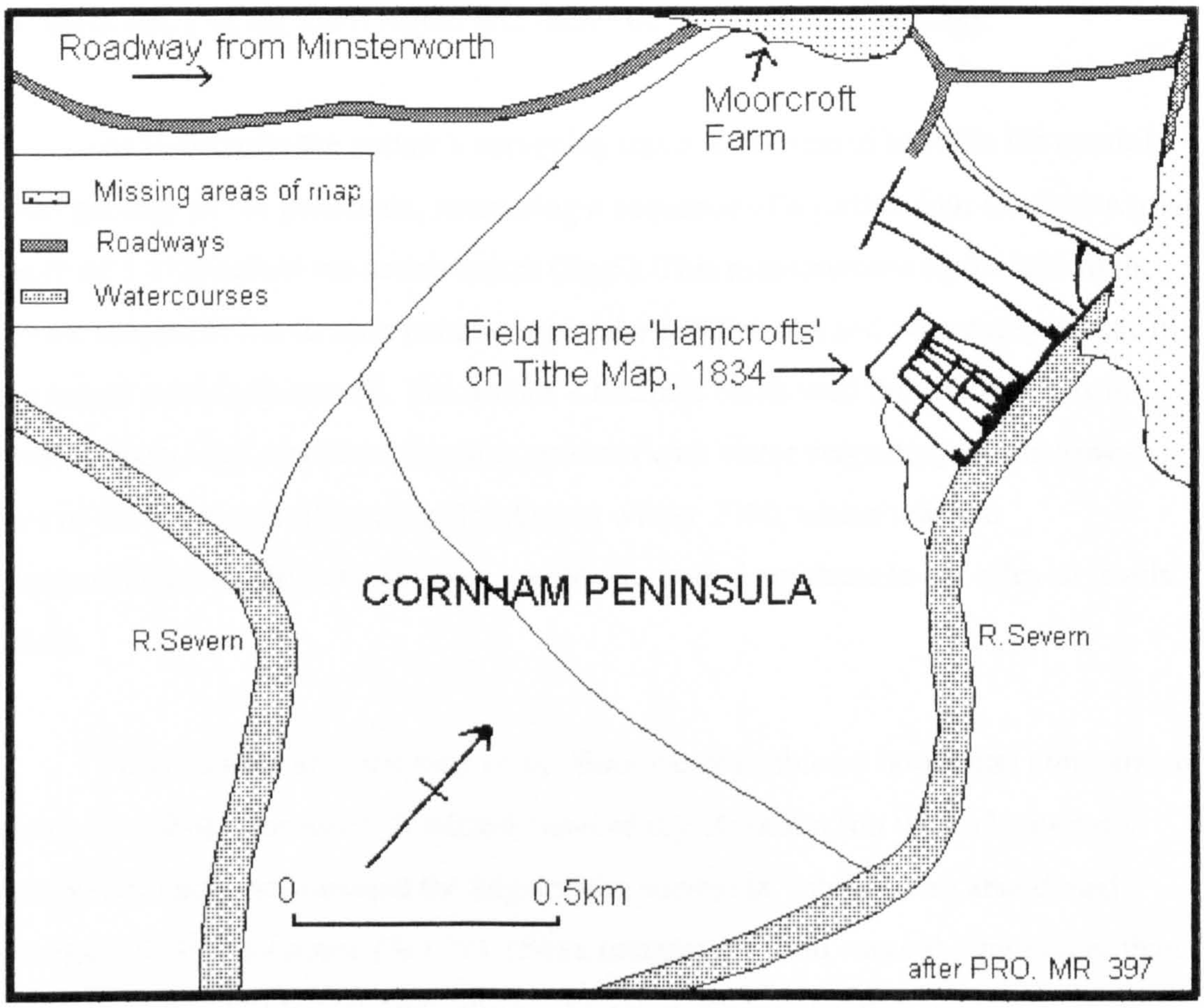


Fig. 18 The location of Hamcrofts (after PRO MR 879)

in the Flaxley Abbey Cartulary (Crawley-Boevey, 1897: 72). Although this cannot be positively linked to the Cornham location it follows entries for both Walmore and Minsterworth, suggesting a geographical progression up-river and would reflect the pattern of riverside property owned by the Abbey.

The field called 'Hamcrofts' lies on an elevation 0.43m below the active marsh, with a further drop of 0.37m in the current field. The latter is reflected in the field name 'Ham Step' on the tithe map. Although the elevation of the sixteenth century Hamcroft would seem high in respect of the elevation-dating model, the earthworks provide a terminus ante quem for reclamation. The measurements themselves conform to elevation levels recorded in the south of Cornham in 1990 (Allen and Fulford 199b: 302,Table 2) and would, therefore, be comparable with the earlier work. If there had been a discrepancy in the elevation of the active marsh through recent engineering work, then it would be a consistent error throughout the area: a lowered active marsh could enhance measurements by reducing the difference in height and placing them higher and therefore later in the chronology.

At Hamcrofts the author's surveying traverse continued towards the central solid geology of the peninsula, measuring a sequence of a further four drops to a total depth of 1.97m below the active marsh (fig.6). This measurement again falls in the lowest section of the Roman parameters of the 1990 model and potentially earlier if the datum needs adjustment. The author's findings confirmed the observations of local farmers who described flooding patterns with water stagnating in this lowest part of the peninsula. Extensive flooding in winter 2000, which reached unprecedented levels, was, as usual, unable to drain from these lower alluvial levels (Pl.8).

Fieldwalking and planning of the floodwater enabled a horizontal comparison across the whole peninsula. A narrow band of dry elevation (on which Hamcrofts stands) defined a strip around the edge of the peninsula. Inland of an abandoned dwelling of Highlay house (SO 794 154) a rectangular field was c.0.29m higher than the surrounding fields with indications of a relict channel leading from its eastern corner towards the river. This arrangement would suggest that the surrounding fields must have been protected by a seabank which left this field open to siltation by the river. Location of the field places it in association with 'the kings meadow' which can be dated back to 1318 (Williamson, 1983. doc.825). A reference in 1532 states that 'the king's meadow' also contained an acre of *persshe ground* (willow bed) called

'pyttmansperssh e' (Williamson, 1983:doc.1210). The topography may suggest a tentative identification of the field as the medieval willow bed. Similar pershe beds can be seen along the river margins in the Minsterworth area on the tithe map.

The data suggests that the majority of the Cornham peninsula had been reclaimed and was productive during the medieval period. Precise chronology of its individual phases was hard to establish. A second traverse, to the south of Hamcrofts, was incomplete due to the presence of a bull in the inner field. Five separate levels were recorded, reaching a depth of 1.49m which confirmed that the inner elevation lies well within Roman parameters. This area lies to the north of the central spur of solid geology which grades gently towards the east, stretching over half the length of the peninsula before ending in a distinct break of slope to the notably flat outer fields. The different geology is reflected in the field names 'hard mead' on the sloping fields. Access to the central area comes via a track from 'Ham Green', lying in the shelter of the spur and a probable centre from which reclamation was initiated.

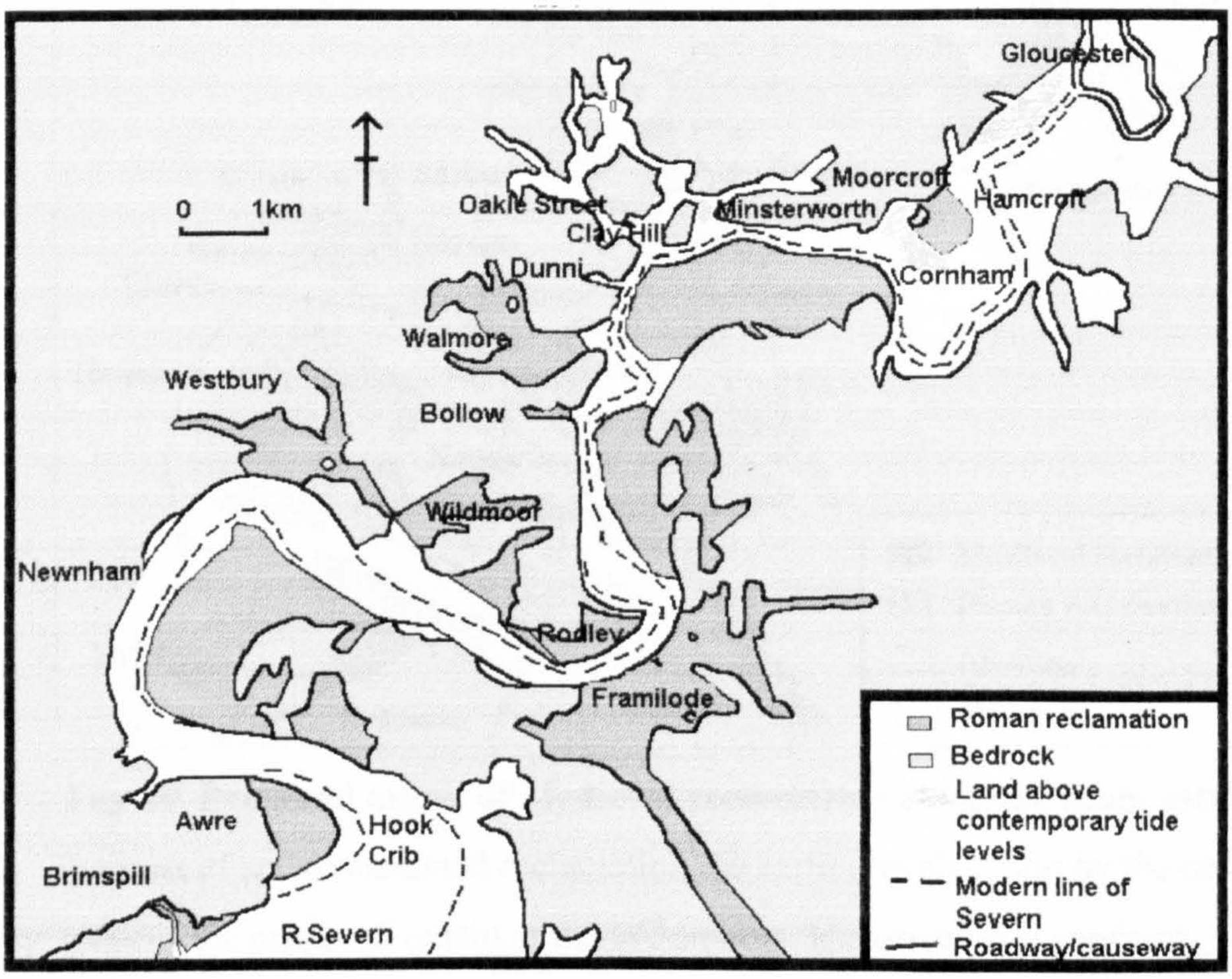


Fig. 19 The proposed extent of Roman reclamation along the Inner Severn Estuary.

The author's survey was far from comprehensive, and further detailed work is needed to map the precise layout of individual reclamation levels and establish their chronology. The results indicate that a landscape similar to that of today had been reclaimed by the end of the medieval period; much of the central area had a far longer history and lay at a depth which would have impeded drainage. With the exception of the Oakle Street area, elevations from all the other areas surveyed produced sequences that suggest that reclamation began in the Roman period, or perhaps even earlier. Although further survey is needed to refine the precise acreages involved, large areas of land, embanked against the river, were available to post-Roman communities in the Inner Severn Estuary, in addition to simply Rodley and Awre as proposed in 1990 (Allen and Fulford, 1990b) (fig.19). Although proportionally smaller, the distribution is comparable to contemporary reclamation on the eastern shores of the Severn.

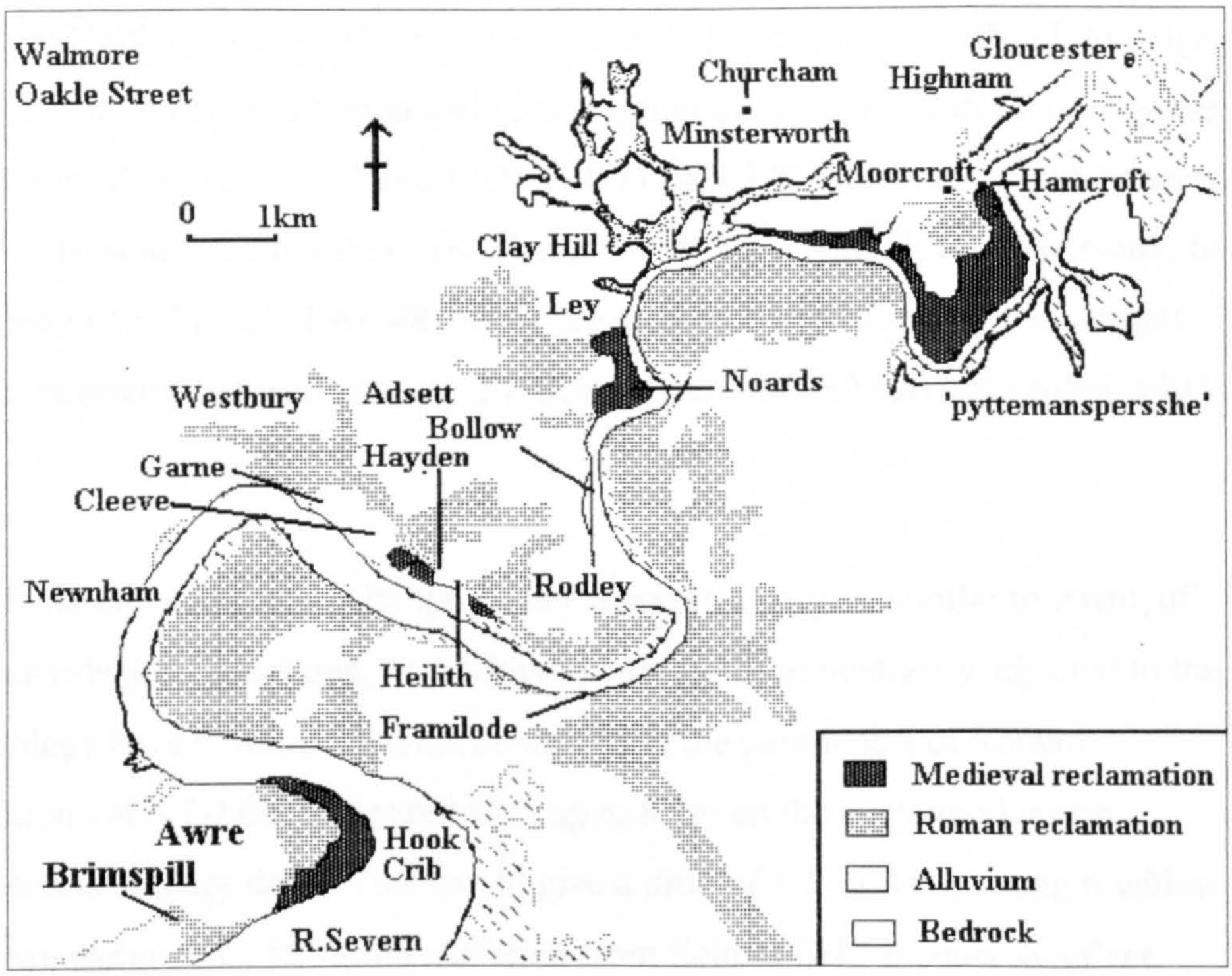


Fig. 20 Proposed extent of Medieval reclamation along the inner estuary.

In terms of active medieval reclamation the earlier levels found by the current survey, reduces the proposed extent at the Wildmoors. Historical data confirms widespread modification and extension of alluvial landscapes post-dating the Roman levels at Westbury, the Noards, the Cornham peninsula and Walmore, the latter recording internal as well as external 'reclamation' (fig.20). The Forest shores of the

Inner Estuary conform to national trends of reclamation during both Roman and medieval periods and do not, therefore appear to be atypical as proposed in earlier studies. Such conclusions refer, however, to the Inner Severn Estuary and different environmental determinants may alter responses in the Middle Estuary.

Lydney

The instability and erosion of the coastline at Awre, on the border between the two zones of the Severn, have been repeated in the Middle Estuary and complicate interpretation around Lydney - 'Of the Lydney Level little is known' (Allen, 2001:22). This later study presents a complex picture, still offering Roman villas as the instigation of land reclamation and suggesting two foci for reclamation, around Lydney (Park Farm villa) and Alvington (Chesters villa) (2002: 41, Fig 6). Aerial photography and field morphology suggests the alluvial landscape has been transformed both by man and by marine incursions which make it difficult to judge original layout or extent. Erosion and re-deposition of 300 acres, recorded at Lydney's 'New Grounds' between 1682 and 1730 (GRO D.421 L8), illustrate the processes at work. Fields, significantly called 'shortlands', lie to the north of the Cone Brook, first mentioned in 1322 (VCH 1996:48). They are truncated and bounded by a straight length of degraded sea-wall running towards Lydney from S0 626 006 (Allen, 1993: Fig.15).

Field elevation survey by the author suggests a pattern, similar to Awre, of small individual reclamations. At Alvington only fields immediately adjacent to the solid geology have elevations which come within the parameters of Roman reclamation - at 6.7-7.0m compared with up to 8.1m on the unclaimed marsh (Environment Agency data). This would give a drop of 1.1 - 1.4m, placing it within the Roman parameters. Differing elevation from field to field appears to reflect different phases within the overall Roman timescale, but they do not reach the depths of reclamations found in the Inner Estuary (fig.21). The sinuous nature of the field boundaries suggest they were often determined by contemporary watercourses. This would minimise any technology involved in constructing sluices, or gouts, across the fast flowing streams. The presence of such watercourses presented a problem in

reclamation not faced in the relatively flat landscape of the Inner Severn shores of the Forest.

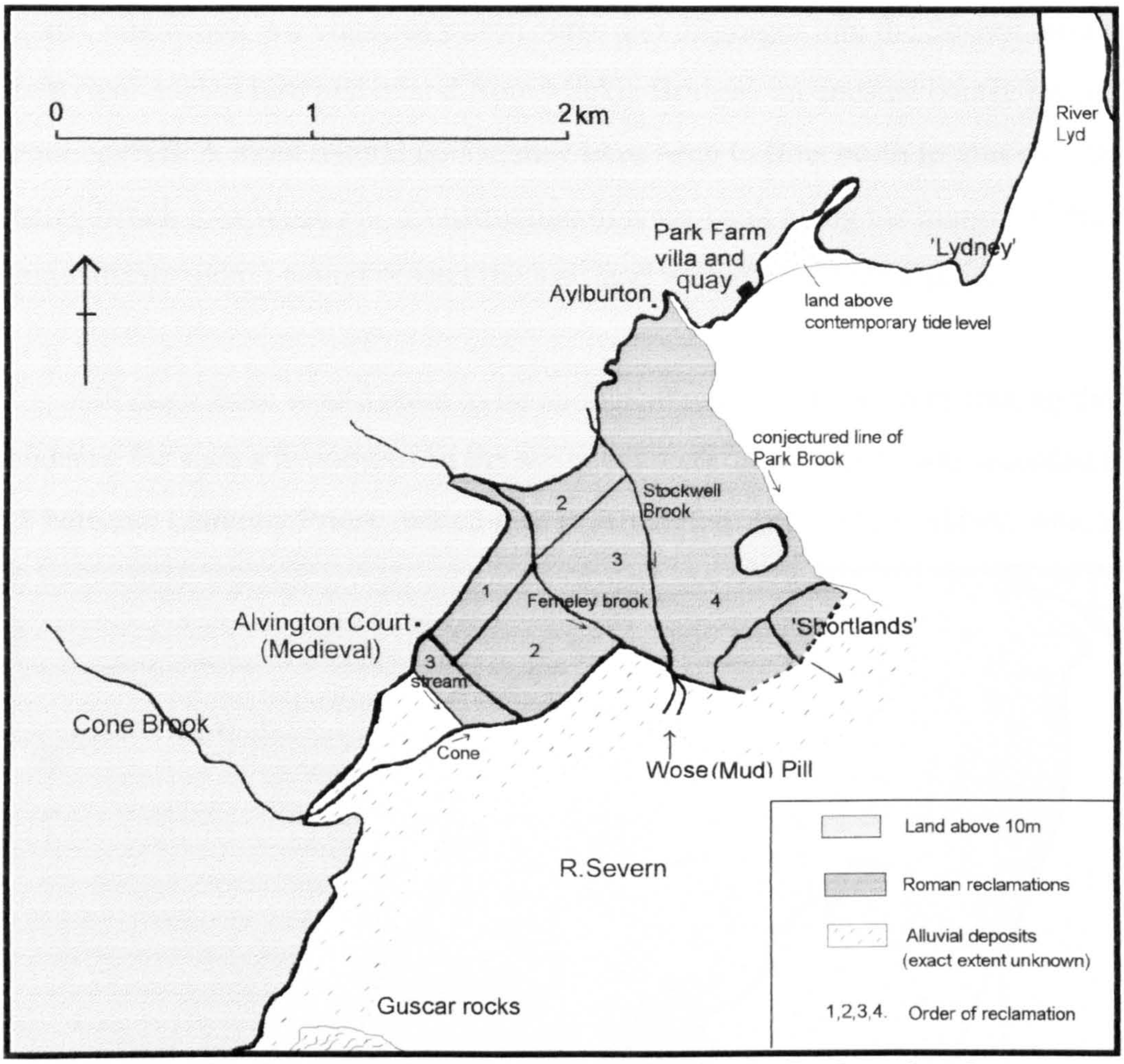


Fig. 21 Proposed Roman reclamation in the Lydney level.

At Alvington the Ferneley (now Sandford) Brook flows as a minor stream into Wose Pill and forms the steeply embanked northern boundary for the fields below Alvington Court Farm. The southern boundary of the fields coincides with a causeway carrying a track from Alvington across the alluvium to Aluredston (Pl.9). From Alvington Court a further causeway gave access via a holloway leading from the vill to the medieval port of Wose Pill, an area surrounded by many abandoned seabanks. Its name, meaning 'muddy', suggests the contemporary topography. Wose lies half way between Alvington and Aylburton, both owned by Llantony Priory during the medieval period. Like many of the watercourses in the levels it was bounded by raised, man-made banks (Allen, 2002:31-3).

It would seem unlikely that the current stream would have had sufficient flow to have eroded a pill of adequate dimensions to support a port. However, to the south modern Cone Brook is a vigorous watercourse and disgorges into the Severn through a sharp right-angled turn just inland from Mickla Bridge - an unusual course given the alluvial context. A more natural course may have been to flow north to join with the Ferneley Brook into Wose Pill. Construction of a sea-bank along the margin of these streams (extant today) would protect the low land without need for a sluice.

Although there would seem to be no logical reason for such a re-routing there is evidence for such a hypothesis in the medieval records. A dispute was recorded in 1318 between Llantony Priory, which owned Alvington, and Tintern Abbey, which

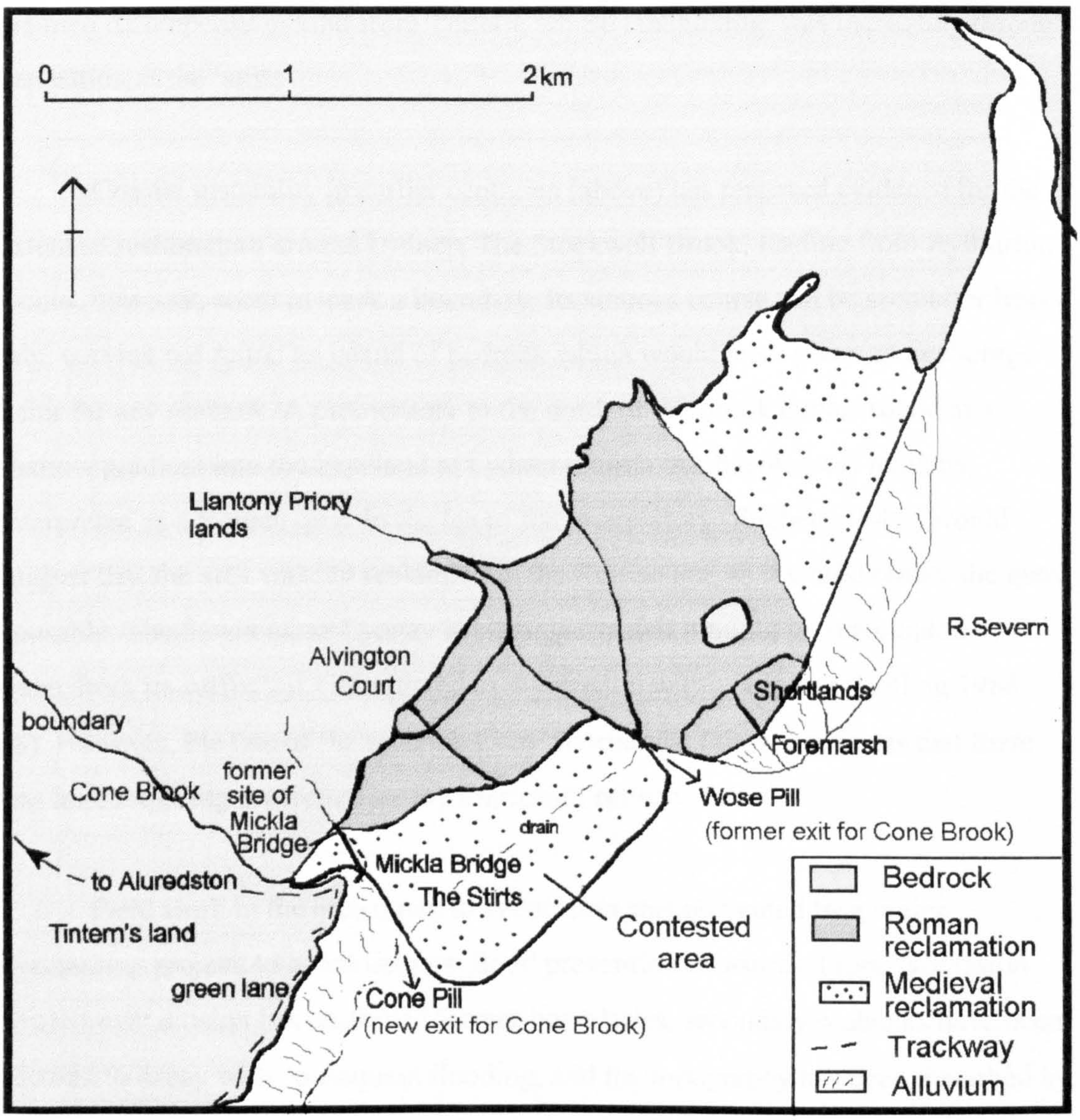


Fig. 22 Proposed medieval reclamation on Lydney level and the disputed boundary of the Cone.

owned Aluredston on the southern bank of Cone Brook (Curry, 1996:47). Accusation were made that the boundary (the Cone) had been moved. Such a task would have been impossible along the majority of the boundary where it runs in a steep valley, but was viable in the alluvium. An original northern route for the watercourse would have allowed the meadow, which was assigned to Aluredston at Domesday, to be located to the river-side of the Cone (fig.22). Blocking the Cone in the alluvial context could have diverted its course to the modern route and thereby annexed part of Tintern's meadow to Alvington (which it was allowed to keep). One interpretation of Llantony's action may be deduced from the similar situation at Awre. Erosion there had produced a law-suit against Slimbridge for theft of land (above). The truncation at 'shortlands' suggest comparable contemporary losses to Alvington, who may have claimed recompense in kind from Tintern, whose landholding was increasing through deposition at the 'stirts'.

Coastal instability in earlier centuries (above) has removed evidence for the extent of reclamation around Lydney. The Stockwell Brook, leading from Aylburton would, however, seem to mark a boundary. Its sinuous course can be seen after heavy rain, curving out round an island of bedrock which would have given an anchorage point for any seabank. A promontory to the north of the brook curves round at a shallow gradient into the headland at Lydney church. Archaeological remains, interpreted as a Roman quay in the lee of the promontory (Fitchett, 1986), would suggest that the area was not reclaimed in the Roman era, as it would render the quay unusable. The Saxon name Lydney itself suggests that it might be surrounded by water from its suffix '*ey*' (interpreted as dry ground within a marsh (Gelling 1984: 38). However, the line of the seabank from 'shortlands' (above) suggests that there was land requiring protection by the fourteenth century.

Field work in the area down to Woolaston was prevented by a major engineering project, to construct new flood prevention measures. From Woolaston downstream erosion has destroyed former boundaries, secondary seabanks have been allowed to decay with consequent flooding, and the topography has been disturbed by nineteenth century railway construction. It was decided therefore that field elevation

survey would not produce accurate measurements. Observation suggests, however, that the lower contemporary tidal range may have allowed at least some of the area of the Guscar rocks to remain exposed during the medieval period. The presence of Chesters Roman villa, at the head of Ley Pill which winds through these jagged rocks, suggests the possibility that the rock would have been soil-covered during the Roman era. Its contemporary landscape may be suggested by comparison with the modern tidal island of St. Twrog's at Beachley. Although today it is often completely submerged, leaving only the remains of its Medieval chapel above water, there is still a considerable area (now eroding) of soil and grass cover. The lower tidal frame in Roman times would have maintained a more extensive soil cover, probably linked to the mainland, if only by a causeway across a ham. In Tidenham parish (in which Beachley lies) 'coastal instability was rife' (Allen, 2001:22). It would render accurate reconstruction of its riverine boundaries exceedingly difficult unless they could be ascertained from the presence of structures such as quays or fishing weirs.

At Waldings Pill the presence of a medieval fishing weir (Ch. 7) suggests that the medieval shoreline would not have projected much farther into the river than at present along the Stroat shoreline. Inland from Horse Pill the stream has been moved. Its former course can be seen by a clapper bridge (ST 576 974), identified by the author from aerial photographs and subsequently excavated by her. Four large conglomerate slabs had been brought from the hills above to span the watercourse, supported by a central pillar. Minimal excavation was undertaken in order to preserve the site. Silting and stabilisation had occurred prior to the early seventeenth century when a road to the quays and fisheries of Horse Pill was described (Elrington and Herbert,1972: 57). The cobbled surface of this road was found during the excavation, running at right angles to the bridge which was incorporated as part of the metalling. Test pits confirmed its presence back to the holloway from Stroat and on into a holloway across the alluvium. Ridge and furrow covered the southern half of the field, truncated by the railway, but respecting the area of a menhir known as 'the broadstone'.

No seabank remains have been found to delineate the agricultural area but these may lie under the railway; short lengths of seabank can be seen near the railway and returning along a minor, unnamed, pill downriver. These extant seabanks are revetted with stone, while those remnants at Woolaston appear to be low, grass-covered, earth mounds - shorter versions of the massive modern embankments upstream. In the absence of modern machinery how much time and effort did seabank construction represent and what dimensions would seem feasible for maximum cost effectiveness for past communities? With no prior evidence available an experiment was undertaken to try to suggest some answers.

The Embankments

Without excavation the internal composition and stratigraphy of the seabanks cannot be confirmed. This has not yet been undertaken in the Severn Estuary and their evolution therefore remains hypothetical. Construction is perceived as a major feat of engineering - and, needing 'enormous requirements to dig ditches', must have involved a large, and organised workforce, such as one directed from a villa in Roman times (Allen and Fulford, 1990b:320). A later paper by Allen collates information on seabanks and suggests, from work outside the Severn estuary, that medieval banks may be in the region of 5 m^3 /m and this would have taken 2.5man days to construct and proportionally more for any larger structure (Allen, 2001:130). While a considerable input of effort may have been required for some large areas of Severn alluvium where extensive lengths of seabank were deployed, the Forest of Dean wetlands were discontinuous and smaller in extent. Consequently they may have employed a different methodology or been designed for a different purpose. Information that a modern ditch digger would be expected to move 15cu.m.of material per day (P.Knight, pers. comm) suggested that minimal labour would be required for an initial, cost-effective structure. Degradation of the extant earthworks mean that the original height is unknown. It would seem likely that there would be a direct correlation to the number of tides the seabank was designed to exclude, which could be calculated from the tide timetables.

One possible methodology associated with small areas of marsh was that designated 'summer dykes'and found in the Netherlands and Germany. Low

embankments were designed to protect crops during the growing season, rather than provide year-round tidal exclusion (Rippon, 2001: 153). Examples have been found or suggested in the Severn at Puxton in Somerset (Rippon, 1997, 1998, 1999) and on the Caldicot Level. They represent individual attempts to improve agricultural productivity, prior to major structures for permanent protection (Rippon, 2001:153). The scale of land units enclosed by the seabanks of Dean in the Inner Estuary would suggest that similar methods may have been employed there.

Based on the extraction estimate of 15cu.m per day it was decided to construct a length of sea bank on the alluvium at Woolaston, to utilise authentic materials and environment. Although it is impossible to re-create precise climatic conditions it was decided to choose autumn for the experiment. This would seem to have been a likely time of year for such activity: it would have avoided both the ravages of winter and the agricultural demands of summer both in respect of land use and available manpower. Data from the local tide timetables discounted September and October because of the autumn bore tides and January and February because of the frequency of high tides in those months. This narrowed the choice to November or December, and with no tides reaching the MHWST level during the former it would seem the most likely time for such a task.

Observation of the behaviour of spoil heaps during three seasons of excavation high in the intertidal zone - to recover archaeological remains of a boat (Parker, 2001) - suggested that while the loose material bonded together and became stable almost immediately during periods devoid of tide cover, they became degraded and spread by water-action over the surface. It was therefore decided to face the experimental structure with adjacent turf from the active marsh. After removal of turf from the site a ditch 2.2m long by 1m wide was dug (fig.23). Its internal face was sloped to test the properties of different gradients on stability of the sides. It became obvious immediately that a berm was necessary to avoid the banked material falling back into the ditch during the heaping process, although it was regularly trampled or compressed by spade to promote cohesion. In this case an arbitrary 0.30m was reserved for the purpose and proved adequate both to prevent slippage and to provide a platform from which to work on the seabank itself. Too great a width would add to

the work-load of the digger in propelling the alluvium to the required site. However, the excavated material naturally fell into the shape of a truncated cone with sides of 45° and became remarkably stable at a width to height ratio of 2 : 1.

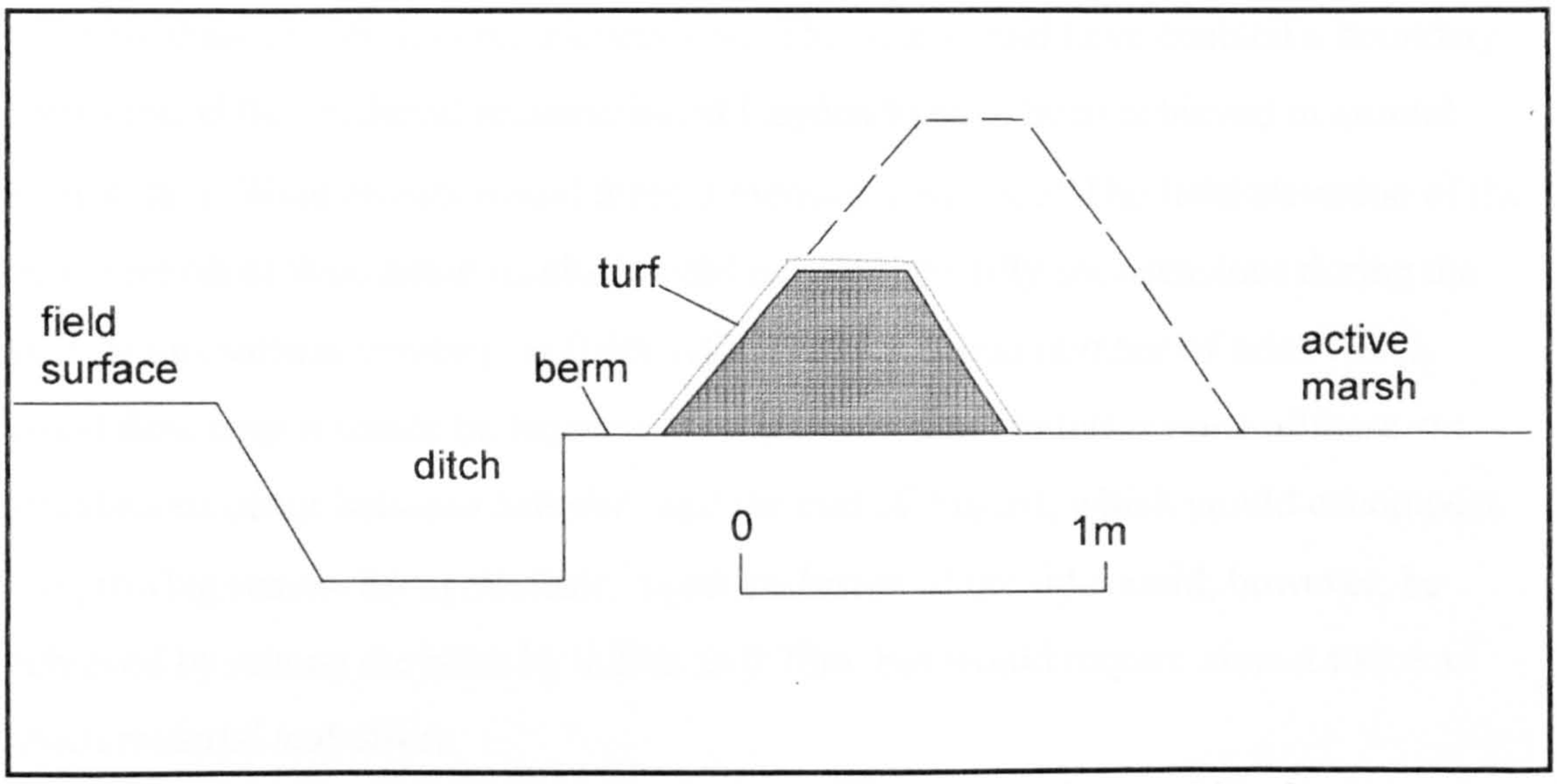


Fig. 23 Diagram of the construction of experimental bank.
The dotted line represents a projected outline of a bank c.1m high and demonstrates the increasing scale of materials needed

The bank achieved measured 0.55m high. Turf, initially removed from the sites of both ditch and bank area (the berm was left intact for stability) was used to cover the structure. The depth of the turf layer raised the overall height of the bank to 0.60m. Sufficient turf remained to provide a second layer on the outside face, which would be most vulnerable to wave action and degradation. The excess of turf suggested to the author that an alternative method may have been employed, in which a turf wall was constructed and then the spoil from the ditch heaped against it before a final facing with turf. Removal of turf for re-use, its storage and re-instatement was the most labour - intensive part of the process of bank construction. If the section of bank-and-ditch had been part of an on-going project, the total time of seventy minutes for the section would have been reduced. In this case turf from the initial area would have needed storage before being placed on the final section. Subsequent turf could have been dug and placed in situ on to the preceding mound, minimising the effort involved in storage and then relocation if turf were to be replaced over its original site.

Results suggest that a single, inexperienced man could theoretically have produced a bank of similar dimensions at least 24m long in a twelve hour day. Although this seems ambitious a skilled manual worker might be expected to be more efficient than a modern inexperienced one. This rate would have enabled a boundary bank around the medieval reclamation at Hayden to have been achieved in around twelve days. What effects would these dimensions produce? The field elevation of the active marsh at Woolaston results in tidal overspill on fifty six occasions during the year. If this surface is raised by 0.50m (the bank) the total number of tides which could flow over it would be reduced to only six. In modern terms none of these six inundations occur between February and the end of August, which would encompass the growing season for agriculture. Total exclusion of the tide could, however, be achieved by raising the bank by 0.20m to 0.70m. but would require almost twice as much material and effort.

Material from later ditch clearances could have been added to the bank to progressively heighten it and keep pace with tidal increase without any deliberate act. It is difficult to understand how this method alone could have withstood tidal action unless turf or some other revetment was added. Progressive height would also have needed comparable base extension to provide stability and the material required would have multiplied accordingly. To supply this from the ditch would have meant deepening or widening it and progressive expenditure of effort for the digger, or loss of the land surface which was being protected. It is therefore more likely that should such material be required it came from the active marsh where its removal could be re-instated by silt deposition. Information from local farmers indicates that such 'holes' fill rapidly.

The rate of tidal increase would have no notable impact within an individual's lifetime and bank management would, in all probability, require little input other than repair. A further strategy, as tide levels eventually increased to levels where action was necessary or banks became eroded, would be to abandon the earlier bank in favour of a similar new construction, whose base would then be on a higher elevation. This would involve less expenditure of effort in terms of manual labour and also

enclose more land overall. Calculations of the relative material required suggest that c.0.30cu.m. would be needed per linear metre to construct a new 0.50m bank in comparison with c.0.70cu.m required to add to a 0.50m bank to double its height to 1.0m. Such an option would, however, clearly depend on the potential of the local topography. The creation of a seabank of any dimensions represents choice on the part of its builder to change or transform the wetland landscape. Such activity must reflect contemporary social, economic and demographic needs or trends in addition to producing a lasting environmental impact. These aspects are considered in the following chapter.

Conclusion

There can be no doubt that stepped field elevations along the riverine landscape represent a chronology of transformations. The current fieldwork has shown that these features are as prevalent along the Forest shores as on the eastern side of the Severn and elsewhere. Measurements of the Forest elevations not only conform to the whole range previously found in the Inner Severn estuary but were not confined to any particular locality or alluvial landscape: similar depths were found whether the alluvium was enclosed within an embayment or exposed on a peninsula. On a broad scale therefore the evidence must uphold the tenet of this thesis: that the Forest of Dean did not differ from contemporary cultural practice.

To refine this to a particular period, is, however, more problematical and the methodology needs refinement. At present the parameters are too wide and while it seems possible to categorise levels which fall at either end of the spectrum - Romano/British or older, or the recent past - those which fall between cannot be readily identified without additional research data. It may be possible to provide dating evidence for a particular alluvial site by carbon-dating its sedimentary inclusions, or by archaeological contexts. To widen such information to apply to the whole elevation to which it seems to refer raises further questions of methodology.

What parameters of measurements are statistically viable to ensure that they refer to a single unit, and how can individual units be recognised? The problem of

conflating levels was raised at Awre: if reclamation was rapid and progressive the difference between the deposition level over a century or two is extremely small. The extent, direction and timing of individual components of reclamation may vary within a relatively small area. Fieldwork must therefore be intensive to ensure it includes all phases and the author acknowledges that the current fieldwork is far from complete.

From the limited fieldwork undertaken it is possible to see the transformation of the Forest's riverine landscape as a continuum, with progressive reclamation, occasionally interrupted by losses through erosion. The process began early in all the areas of the Inner Estuary, probably late Iron Age at Walmore. In all cases, other than Walmore, the areas reclaimed were small and adjacent to the solid geology. However, in terms of the necessary construction, Walmore conformed to the category of small-scale enterprise. In the Middle Estuary most of the alluvial areas, although perhaps modified by stream straightening, were not transformed by reclamation at an early date. The reclamation in the Lydney embayment was again small and piecemeal, but on elevation levels was comparatively later in the Romano/British period than the Inner Estuary.

All the reclamations in the Inner estuary, again with the exception of the small stream at Walmore, involved areas which were topographically devoid of watercourses. In the Lydney area, where watercourses were both present and vigorous, reclamation was located between them, and as such would appear to demonstrate a deliberate strategy to minimise technological input. Published work on reclamation always includes the supposition of a gout with which to remove either surface or flood water from any enclosures created by reclamation. Creating enclosures between, rather than across, the streams avoided the problem. Although the low-lying areas of such early reclamations need drainage today, their position relative to the tidal range at their inception would equate them to fields on the modern active marsh from which occasional floodwater filters naturally. A warm, dry spell during the Roman period would also have helped prevent excessive flooding and dried the ground more rapidly. A culvert under the sea bank near Cone Pill (fig.28) demonstrates an alternative low-technology approach if drainage had been required; a stone could have blocked the inside entrance to prevent tidal access and been

removed as necessary, or a simple board hung on a pole across the outside entrance could have provided an external flap to prevent water entering as the tide rose. The frequency of regular flooding would have depended on the vertical dimensions of the seabank, a statistic which remains unknown and related to local contemporary requirements.

The author's experimental work demonstrated that the short linear dimensions of the Forest seabanks would not have posed major engineering problems and needed a minimal workforce for their creation. Maintenance and extension could form part of general tasks, such as ditching and hedging. If the banks were not maintained, erosive processes would gradually have degraded them and the subsequent inundation would have continued deposition inside. The existence of clearly-defined elevations in the alluvium, dating back to the Romano/British period, must therefore indicate a continuous and active occupation of the riverine landscape and a culture in which the seabanks had a significance. Population distribution must have been widespread along the Forest shores from the Roman period, in contrast to the empty landscape above Rodley proposed in 1990 (Allen and Fulford, 1990b: 319).

Lack of definitive levels prevents identification of specific activity within the post-Roman or Anglo-Saxon eras. From the relative pattern of seabanks it is possible to propose a different response in the Walmore reclamation to that at Moorcroft. At Moorcroft concentric rings of reclamation extended the landscape, with no notable increases in elevation to indicate a long duration between such constructions. At Walmore the drop of 1.2m indicates a stagnation after the Romano/British period; the bank was progressively heightened to accommodate tidal incrementation. Although the obvious differences in scale may be involved - with Walmore adequately providing sufficient resources for the local community - the cessation of expansion may be related to problems with drainage.

A worsening climate during the Anglo-Saxon period would have increased rainwater and consequential flooding, compounding the problems of rising tide levels. Areas of early reclamation would now have required some form of gout because of their depth relative to the increased tidal frame. No gouts from this period have been

found, but again there is no reason to suppose that they were elaborate and may have run under the seabank in the manner of the Cone example. The raising of Walmore's stream to disgorge over the seabank was a different response. It may indicate that only this small watercourse had a gout and the seabank was a solid construction against the tide, limiting the area enclosed to natural processes and seasonal use. Although it may be co-incidental there appears to be a correlation between areas where deep elevations were measured and the Saxon term 'mor' - Moorcroft, Honey Moor, Littlemoor, Great Moor, Wildmoor and Moreton Valence. 'Wildmoor' gives the suggestion of abandonment and perhaps by the Anglo-Saxon period the names describe a particular type of contemporary landscape, created by a waterlogged environment.

Evidence for such waterlogging can be seen in a contemporary initiation of ridge and vurrow in Somerset, also found below Chaxhill and at Wildmoor. Both are small areas which might represent individual interests which could not be replicated on the scale of Walmore. As tidal range progressed gouts would have become a necessity. Ditches which drained these lowest levels would have become progressively deeper relative to the outer reclaimed areas. Embanking along their length, such as at Hayden, as well as an apparent attempt to unite all water-management arrangements to the Chaxhill end of Walmore seabank suggests that any such gouts were located as far inland as practicable and near to settlement. They could therefore be less extensive or substantial than at an exposed site. Some protection against tidal damage and flooding may have been afforded after the Conquest both by an improving climate and a phase of deposition along the Forest shores. Sandbanks at Hayden and around Awre began to stabilise under vegetative growth, and extension of the reclaimed area was aided, if not fuelled, by environmental factors. Such factors could be equally destructive, with erosive episodes at both Awre and Lydney. Loss of land and a response of set-back of seabanks to a more stable foundation would mirror current management of the riverine landscape. Undermining is the modern cause, but seabank failure might be equally devastating in its effect.

The levels to which the Awre shoreline retreated come within the Roman parameters. If the seabank had stagnated and, like Walmore, had been built progressively higher, with only a narrow band of medieval reclamation beyond, it might have been unable to withstand a particularly forceful period of tidal activity. Once breached, or undermined, the loss would have presented enormous engineering problems, particularly in reinstating a bank across the deep chasm of the eroded rine. To replace a seabank of such a height as that required at Awre would require a huge input of manhours - at least seven times the amount of material needed for a 0.5m bank, with proportionally more for the bank across the rine. Set-back to a straight line which incorporated the solid geology (and consequently shorter lengths of unsupported seabanks) would suggest the most efficient response. There is no evidence of any attempt to secure any remaining land outside. At Alvington, set-back can also be detected in the field morphology, dated to the medieval period on field name evidence, but here the fields were subsequently restored and expanded. The timescale is unknown, but may have been rapid, as demonstrated by the later erosion/deposition episode at Lydney.

Although environmental processes would have influenced the physical capability, a further factor in reclamation may be seen in the relationship of the lost alluvium to settlement. At Alvington the settlement was part of a wider monastic ownership, with the potential economic support to withstand a period of land loss before recovery. Woodend (Awre) does not appear to have survived the reduction and dissection of its domain as an independent unit and continuity was lost. The demise of Woodend highlights demographic, social and economic factors which provided impetus for land reclamation. These are considered in chapter three.

CHAPTER 3: THE ESTUARINE LANDSCAPE: RESOURCES, SETTLEMENT AND COMMUNICATION

Introduction

In their natural state wetlands can produce varied and valuable resources; fish, fowl, pasture, salt, alder and willow for hurdles, wattle and baskets. Any change to this landscape must, therefore, have provided a greater benefit to the society which invested time and labour in construction of earthworks for reclamation. Reasons given for their construction are currently divided into two opposing categories: defensive and offensive. Seabanks are commonly described as sea defences and this is a view subscribed to by Rippon (pers. comm.); he suggests that the structures protected land from inundation by rising tide levels. Allen's view contradicts this. He views seabanks as offensive structures which were built to create wealth; 'reclamation transformed a landscape from largely seasonal use to one which can be permanently settled and farmed, either pastorally or agriculturally, for a wide range of crops' (Allen, 2001:127). The author explores the ideas offered in these hypotheses in the context of the estuarine landscape as a whole, presenting the evidence before drawing conclusions at the end of the chapter.

Allen's theory of marsh elevation (1990), suggests that the elevation of areas which are unprotected from tidal inundation represents the height of Mean High Water Spring Tides (MHWST). This relationship is the same for historic as well as modern marshes. Using this model the current author suggests that the appearance of an unprotected Roman or medieval shoreline should resemble that of today's unprotected river margins - termed the active marsh. Fieldwork by the author notes that there is no marked differences in vegetation either side of extant seabanks, whether the structure is intact, as at Rodley, or broken down, as in the Stroat to Woolaston area. In the latter area, however, there is a tendency for grasses to be of a slightly coarser nature than those upriver (related to the increased salinity of flood water in the middle estuary). Cattle and sheep graze these margins, wandering on to the intertidal mud-flats and deriving essential salt from the vegetation. Hay is harvested from the active marsh around Rodley. The modern marsh, therefore, is fully integrated with the farming regime.

Similar integration was possible in the past; 'experiments and palaeoenvironmental evidence from Britain and the Continent demonstrate that arable crops can be grown on a high intertidal marsh' (Rippon, 2001:146). Crops would, however, seem potentially vulnerable to the force of any flood tide. A high water table may also have produced an environment prone to moulds and mildews in seed with less resistance than modern varieties. Rye is particularly susceptible to fungal damage, though the crop is primarily grown on dry soils; other crops may suffer similar damage through damp storage conditions. Affected crops can produce the bacterial disease of ergotism in humans.

Aerial photography and earthworks in extant grassland demonstrate the abundance of medieval ridge and furrow along the whole of the Severn margins of Dean. The majority is on solid geology or on the higher levels of alluvium, ignoring reclamation below c.1.2m - defined as Roman reclamation. Mill stones and a leat at Chesters Roman villa suggest contemporary arable farming near the river, but further evidence is lacking (Fulford and Allen, 1992: 189). If low-lying land had once been arable it would seem that its suitability may have begun to be questioned during the Anglo- Saxon era as sea-levels rose. Archaeological evidence at Gloucester identified spelt wheat, a hardier variety than the more easily processed bread wheat. Local use of this variety suggests less than ideal growing conditions in the Severn valley during this period (Heighway et al.1975: 189); it would be compatible with the implementation of ridge and vurrow drainage, even in meadow (Rippon,1997: 19, Fig.4). Lloyd-Jones suggests climatic deterioration produced a contemporary tendency towards pastoralism in South Wales (1984: 2-5).

Post-Conquest arable on local alluvial levels is, however, consistent with use of reclamations on the eastern shores of the Severn. 'Ridge and furrow survival in a few areas supports the documentary evidence for fairly extensive arable cultivation, at least from the eleventh to fourteenth centuries' (Rippon, 2001:147). Rippon's view is partly based on aerial surveys, particularly the medieval ploughlands in the Vale of Berkeley (Allen, 1992:87-97). Documented evidence in Somerset, though largely limited to the Glastonbury Abbey estates at Brent, Withy and Sowy, demonstrates far

higher yields and land values in alluvial areas than from adjacent dry land production (Harrison, 1997). Such productivity would suggest a distinct advantage in locating cereal crops in the alluvium. Crop diversity was also noted, with legumes augmenting wheat, barley and oats (Rippon, 2001:147-8). Given the drainage problems, noted in the lower Dean alluvium (ch.2), it would seem likely that any such arable would be located on higher and later reclamations.

Crop diversity can be found in the thirteenth century records of Tidenham (Hart,C. undated ms.). The bulk of its wheat, barley, oats, rye, beans, peas and vetch were sent to the castle of Striguil (Chepstow) to which the manor belonged. The fields of 'langefurlonge', 'richoledesland','holneyshul' and 'bulegareston' were arable. Their location is unknown, but the latter name may survive as the 'Garston' west of Stroat. Aluredston (Plusterwine in Woolaston) produced wheat, and rye. Barley and maslin came from Hugh, reeve of Beachley. These crops were, however, only part of a mixed agricultural economy. Further upriver wheat, barley and beans were grown at Lower Ley in 1240 (Hart, 1863: Acta.169), a similar crop variation to the wheat, rye, barley, oats, peas and beans at Highnam in 1267 (Ellerington, 1972: 23). The salt tolerance of beans, and their ability to grow in heavier soils, meant that they were able to be grown on high intertidal marshes (Crowson et al, 2000. Insole, 1999 and Murphy,1993, in Rippon, 2001:149). In Somerset, legumes appear to be a specialized form of farming -as high protein fodder for pigs or horses - rather than part of crop rotation to improve fertility (Rippon, 2001:147-149). In southern Dean an interesting juxtaposition of 'Pease Leaze' and 'Horse Leaze' occurs west of Wibden, on damp, but not reclaimed, land. Population pressure is often given as a reason for thirteenth century reclamation across Britain (ch.2). Legumes may, like the spelt (above), represent attempts to maximise yields in respect of contemporary environmental conditions, by using crops with tolerances relevant to the new landscapes.

Apart from Wibden (above) a further clue to legumes in Tidenham can be seen in the field name *pease edish,* shown on the tithe map near Plusterwine Farm (Gwatkin, 1992). Local soils, deriving from the St. Maughan's brownstones should be naturally fertile. Use of peas for manuring might suggest nutrient depletion from a

long duration of agriculture, and *pease edish* is adjacent to the site of Chesters villa. (above). Rights of marl had also been used by Tintern Abbey to improve soil quality in its nearby Ashwell grange (Williams, 1983: 104); marling and dung spreading were common practices in medieval agriculture (Faith, 1997: 237). Maintenance of soil quality would have enabled the 1,000 acres of arable at Woolaston to remain productive until the Dissolution, in spite of a general tendency towards pastoral economies after the fourteenth century (Williams, 1984: 294).

Domesday Agriculture

Domesday evidence suggests earlier arable regimes in Tidenham (owned by Bath Abbey until 1066). The figures suggest a greater concentration of ploughland than in other areas of the Dean, with recordings of 38 ploughs plus two separate holdings with a single plough each (Morris, 1982: 1.56, 31.6, 39.11). All the ploughs were owned by villeins in spite of ten of the manor's thirty hides being 'in lordship' - the lord relied on rent service to tend his own fields. Earlier, tenth century charters for Tidenham describe a similar, predominantly arable regime, with dues for sowing, ploughing and boon (harvesting) (Robertson, 1939: 204-7). Archaeological excavations into the earthwork of Offa's Dyke near Beachley found that turf was a main component in its construction (Hill, 1996). The availability of such quantities of grass would suggest the presence of pasture in the Beachley tithing for the eighth century.

No Anglo-Saxon charters survive for the rest of the Dean. By Domesday ploughlands appear to be numerically concentrated along the Severn margins (Morris, 1982). One hundred and fourteen ploughs are recorded for the area down-river of Awre in contrast to only twentyseven upriver, with a minimum in lordship. To the west of Dean none were recorded for Madgetts or Wyegate manors. Earthworks, in the form of lynchets on the southern flanks of the Brockweir valley (adjacent to Madgetts) would suggest some agricultural activity. Only seven and a half ploughs were actively being used at Ruardean, though there appears to have been capacity for more;' three ploughs would be possible' on the lord's land in the manor (Morris, 1982: E7). The manors of Redbrook, Staunton and Whippington, further south, were

recorded as waste. Low productivity in the western area of Dean would seem to be a combination of poor soils and aspect with an instable political situation along the border. The northern areas of the Forest, in the Vale of Gloucester, were more densely ploughed, but the total of eighty four and half was still less than that of the southern Severn margins. Like Tidenham the greatest concentration, at Dymock, was being ploughed exclusively by tenant farmers.

Mill sites identify processing areas. In the Tidenham area this appears to have been concentrated at Woolaston which recorded the only pre-Conquest mill south of Cone Brook. Archaeological remains of earthen dams and leats (ST 584 989) suggest its location on the Black Brook, the first of a succession of mills along its valley (ch.8). Tintern Abbey, which owned Woolaston Grange, acquired Tidenham's 'Sondmill' in 1282 (Hart, 1987: 5) - this may have been Tidenham's 'new mill' which was created between the Conquest and Domesday (Morris, 1982: 1.56). Its construction suggests a contemporary expansion in local agricultural production. Earthworks of a mill-pond at ST 577 983, noted by the author, would seem to be the location of Sondmill. Further Domesday mills reflect other areas of contemporary production: Alvington's mill presumably utilized Cone Brook, a watercourse which has supported mill sites into modern times. Extant earthworks, at SO 595 012, are inland, and do not suggest a contemporary emphasis on arable farming in alluvium contexts. Lydney's mill appears to be on Park Brook, on the parish boundary with Aylburton, where a mill remained until modern times. Lydney's Domesday valuation, at forty pence, is the same as the mills at Alvington, Woolaston and Tidenham.

No separate mill was recorded for Naas, but a Domesday association with Awre suggests that it used the mill at Awre. A mill (designated as Saxon in the Gloucester SMR) is located on Blackpool Brook at SO 696 077 (GRO D3921,11/20) using the only available watercourse in this area. A valuation of thirty pence might suggest lower productivity for the area but this is offset by a second mill to the north 'on the edge of the parish' (Morris, 1982: 58.3). This would place it on the stream feeding into Bullo Pill. No ploughland is allotted to this half-hide property, but at nineteen shillings the land and mill were worth seven times the value of the southern

mill. The combined value of twenty one shillings and six pence contrasts with valuations on the Berkeley estate opposite, on the east of the Severn, where eight mills were valued at fifty seven shillings and six pence plus two at twelve shillings (Morris, 1982:1.15).

Most of the other Forest ploughlands do not have mills recorded for the manors, even for the forty seven ploughs of Dymock. It suggests that, just as manpower and machinery was brought in to work the lord's land, the crop may, in some cases, have been sent out to specialist centres, avoiding the necessity to invest in any infrastructure. A variation is apparent in the output and value of the mill sites, perhaps reflecting the efficiency or size of the installation. Water-mills were widespread in England by the eleventh century, replacing hand grinding which was formerly carried out by women slaves (Faith, 1997:64). Slaves are recorded in Domesday for several of the Dean's vills, and there may have been some retention of hand querns, particularly where output remained small. In spite of the potential for windpower along the Severn margins there is scant evidence for the local use of windmills during the medieval period. A single windmill is documented at Bollow (in a field still bearing its name). It was given to Flaxley Abbey in the thirteenth century (Crawley-Boevey,1897: 154). Ruins indicate another, undated windmill at Tutshill.

Variation in the valuation of Domesday mills is matched by a variation in overall manorial values (fig.24a). These can be viewed as percentages (fig.24b). Awre had a far higher value than Lydney, comprising 21% of the total value of all the Domesday manors in Dean, compared to only 2% and 1% for Lydney and Alvington respectively. The percentages for Minsterworth and Churcham (the Domesday manors of Morton and Ham) also only reach single figures and appear consistent with the small-scale land reclamation noted by the author. By comparison Rodley, the largest area of land reclamation, produced 42% of the Domesday wealth in the Dean (fig.24b). These figures suggest that those areas which had early land reclamation maintained an economic advantage up until Domesday. In proportion to the regional context the overall output would seem small.

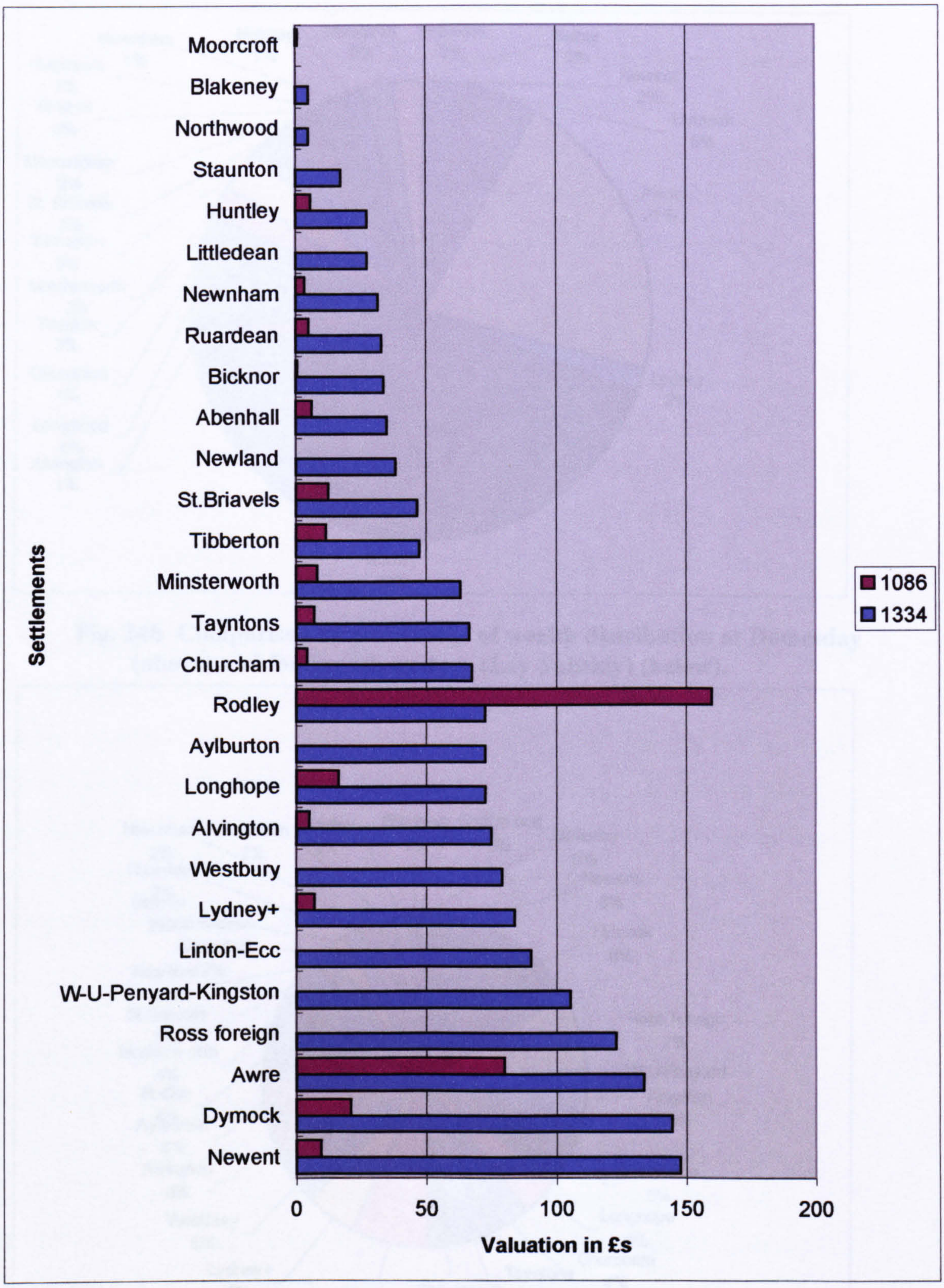


Fig. 24a Comparative wealth distribution between Dean manors in Domesday and the 14th century (Lay Subsidy):
compiled from data in Morris, 1982. Glasscock, 1975.

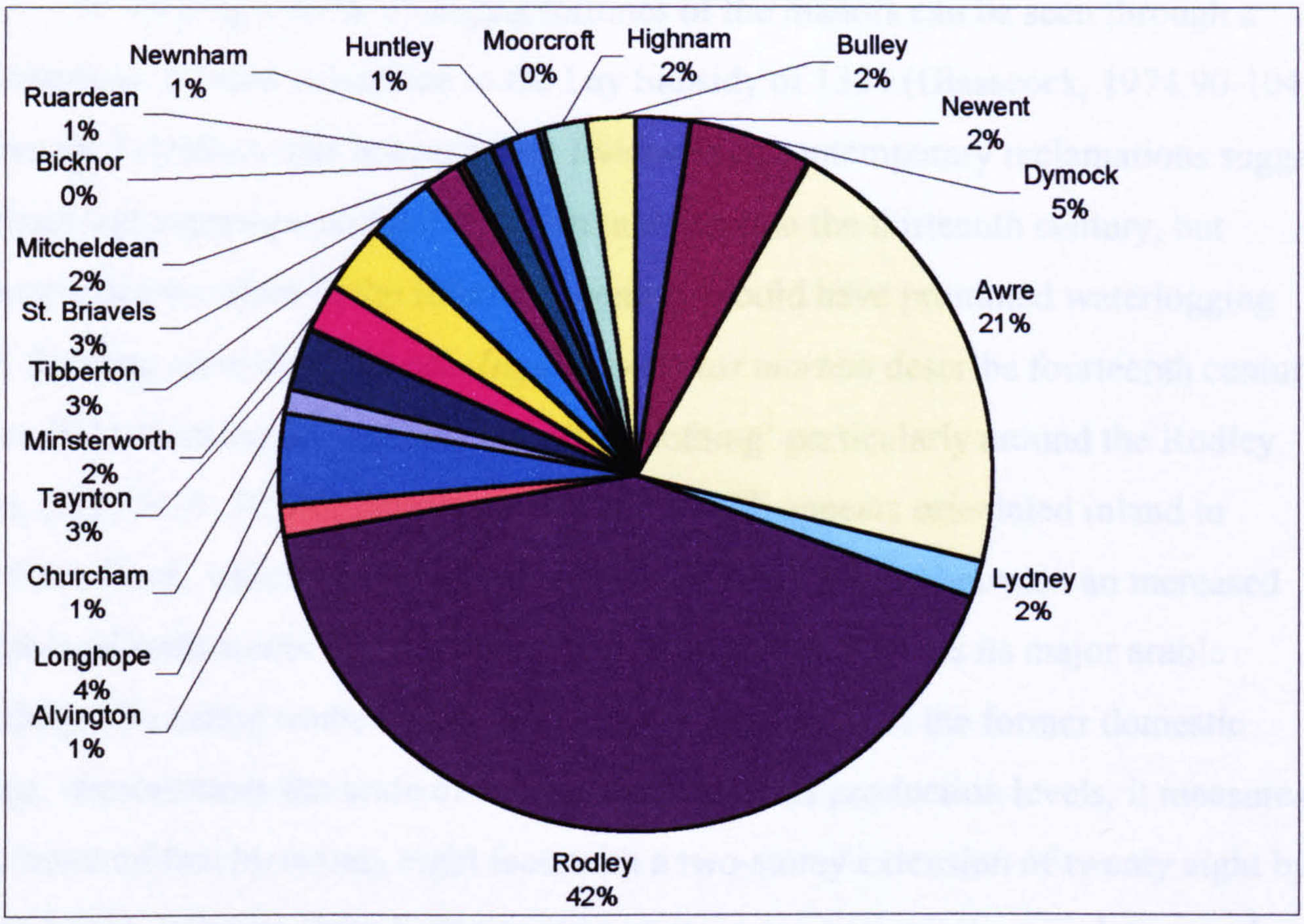
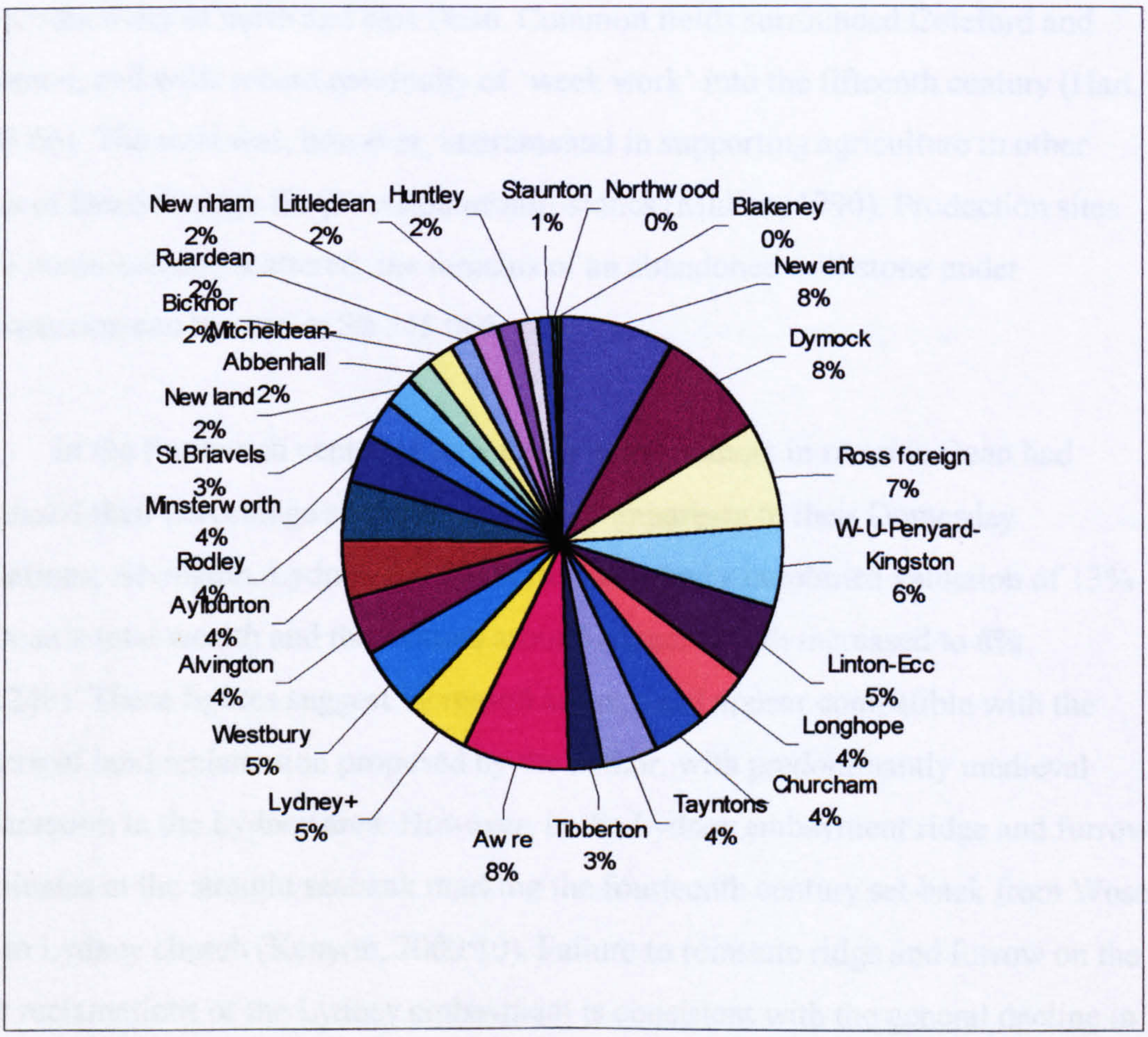


Fig. 24b Comparison by percentage of wealth distribution at Domesday (above) and fourteenth century (Lay Subsidy) (below).



In the longer term, changing fortunes of the manors can be seen through a comparison of Dean valuations in the Lay Subsidy of 1334 (Glasscock, 1974:90-104), although Tidenham was not included. Evidence of contemporary reclamations suggest agricultural expansion along the Severn margins into the thirteenth century, but climatic deterioration in the following century would have promoted waterlogging and flooding around the Severn. *Inquisitions post mortem* describe fourteenth century three-field rotations as 'ruinous' or 'worth nothing' particularly around the Rodley area, (Fry, 1910: 365-6). Fourteenth century wealth appears orientated inland to northern Dean, which had 53% of the total, although divided between an increased number of settlements. Flaxley Abbey's grange at Dymock was its major arable holding. The extant timber-framed barn, to the southwest of the former domestic range, demonstrates the scale of storage needed for its production levels; it measures one hundred feet by twenty eight feet, with a two-storey extension of twenty eight by sixteen feet. Western Dean began to support its expanding mining population with local agriculture, grown on land cleared from the woodland (ch. 5), but did not match the productivity of north and east Dean. Common fields surrounded Coleford and Staunton, and wills record continuity of 'week work' into the fifteenth century (Hart, 1983:66). The west was, however, instrumental in supporting agriculture in other areas of Dean through the provision of mill-stones (Mullen, 1990). Production sites were numerous and scattered: the remains of an abandoned mill-stone under construction can be seen at S0 545 065.

In the fourteenth century Lay Subsidy some manors in riverine Dean had increased their percentage share of wealth in comparison to their Domesday valuations; Alvington, Lydney and Aylburton now had a combined valuation of 13% of Dean's total wealth and the manors around Minsterworth increased to 8% (fig.24b). These figures suggest increased activity and appear compatible with the pattern of land reclamation proposed by the author, with predominantly medieval reclamation in the Lydney area. However, in the Lydney embayment ridge and furrow terminates at the straight seabank marking the fourteenth century set-back from Wose Pill to Lydney church (Kenyon, 2000:10). Failure to reinstate ridge and furrow on the later reclamations of the Lydney embayment is consistent with the general decline in

arable farming in the fourteenth century: the field names Rodmore *Mead,* Aylburton *Mead*, Lydney *Mead* demonstrate the local focus on meadow in later periods. A similar pattern appears at Cornham where the fourteenth century field name 'King's meadow' appears to signal change in use from the arable ridge and furrow which had predominated over the peninsula (reflected in the name 'Cornham'). Land valuation at Tidenham in 1306 ascribes eighteen pence per acre to meadow, three times the value of the best arable land (Fry, 1910: 46). There would be an economic benefit in initiating or converting reclamations to the more valued commodity.

Pasture and Meadow

Pasture was essential for fodder either in pastoral regimes or for draught animals in arable farming. 'The multiple estate can almost be defined as a core settlement, or settlements, with rights to grazing on distant, or not so distant, land elsewhere' (Faith, 1997:145). Faith sees grazing rights as one of the shaping influences in the development of new agricultural practices. In the Dean the peripheral location of its early medieval settlement would seem to have allowed a central upland core available for grazing and pig pasture; such rights were known as commoning. Commoning was related to specific landholding, retained at Woolaston and Aylburton commons. Such rights are still exercised in the forest today, though usually with sheep. Grazing determines the nature of the flora and prevents the growth of new shoots (necessitating banks and hedges around coppices) and maintains an open environment.

'Pasturage was generally coming under pressure in late Anglo-Saxon England, from estate fragmentation and an increase in stock farming' (Faith, 1997:145). Creation of Royal Forest in the Dean (ch.4) presented additional curbs locally. Commoning was still permitted, but constrained to particular areas by the end of the thirteenth century as demand grew and woodland decreased (Hart, 1987: 20). Grazing was restricted to the 'thorns' around the margins of the woodland and designated pastures (ch.5) were concentrated in the central area of the Forest, around Cannop ponds or at Walmore, reached by designated routes. Cannop was linked to the settlement of Coleford by using an existing route which ran through the contemporary

stone quarries. Remnants of its cobbled surface are extant beneath the later tramway.

Limitation of pasture can be seen as a spur to re-organisation of the arable regime. The creation of common fields could co-ordinate cropping of stubble to replace or augment depleted grazing, in addition to the social causes for common field creation which have formerly been mooted (Faith, 1997:145-7). Depositional processes along the Severn margins would have provided additional potential for increased grazing in Dean. Not only would flood waters provide warmth and nutrients to promote growth, but, where salt water was involved, pasture would have been free from liver fluke.

In Domesday specific mention of meadow was restricted to Aluredston (ten acres), Highnam (thirty acres) and St. Briavels (twenty acres) (Morris, 1982: 31.2, 10.11, 32.11). Each may represent a response to different circumstances: Aluredston lay in an area of intense arable farming, Highnam was near woodland reserved for hunting (ch.4) and St. Briavels was hemmed in by forest. However reference to 'mowing half an acre' as a task for the *gebur* in the Tidenham charters suggest meadow had been established elsewhere (Robertson, 1939: 207). By 1306 customary tenants in Tidenham were mowing a meadow called 'medshep' for the sum of twelve pence or one sheep (Fry, 1910:71). Lancaut provided hay to the grange of 'Richoldesmerse'? (GRO D3921, 111/31). 'Ridge and vurrow' may suggest the presence of late Anglo-Saxon meadow (Rippon, 1997:19, Fig.4) and was identified by the author in the reclamations of Bollow and the Wildmoors (ch.2). Although the topographical name 'Wildmoor' suggests an initially uncultivated area, modification, seen through the earthworks, suggests increasing pressure on local pasturage, although elevations below 1.2m remained as rough grazing.

Rough pasture would have been available on the wharth, or wharf, (active marsh) outside the seabanks. Progressive reclamation moved this natural environment further away, beyond a managed landscape. Ensuring continuing access to the natural resource required frequent modification to drove and trackways. At Awre organisation of such trackways maps out the successive waves of land use, each

terminating at a former seabank (fig.9). The funnel shape of the track from Awre church demonstrates its origin as a drove road to the earliest reclamation. A similar shape can be seen in tracks entering western Walmore (SO 729 153), western Cornham (SO 793 173) and northern Cornham (SO 798 179) and suggests similar pastoral regimes there. The routes lead to settlement at Adsett, Ham Green and Moorcroft respectively.

Active management to provide enclosed meadow in individual ownership, as well as arable within these reclamations, appears during the thirteenth century. One of Flaxley Abbey's meadows yielded twenty loads of hay per annum in 1291 and Walmore was one of its most valuable Forest holdings in the *Valor Ecclesiasticus*; Walmore grange held a vineyard from 1200, suggesting a favourable climate at this period and agricultural diversity (Crawley-Boevey, 1897:171, 48, 148). Enclosure eroded the Common and competition for the resource can be seen in a thirteenth century Crown plea by the men of Rodley and Adsett. A complaint was made that the way to Walmore had been blocked by the monks of Flaxley who had 'diverted it to another place which is not adequate' (Maitland, 1884: 81). At Cornham 384 individual pastures were recorded on the tithe returns, in the small unenclosed 'Common Ham' east of Moorcroft. In some cases such strips did not survive; property including Hayden 'which was a great time since divided and separated by certain meres, mere rods, stakes and other divisions has been ploughed up, meer stocks pulled up so that divisions could not be found' (*Chanc. Proc. Ser.II* 163.68)

Other medieval reclamation supported meadow, particularly around the Clay Hill and Oakle Street areas (Gwatkin, 1993). These fields appear to represent individual holdings, in contrast to the common meadows which predominated on more exposed areas of reclamation. Naas recorded 'le Loue Leye', 'Rodhay', 'Ellern Acre' and 'Severneggefurlonge' in 1400. The former use as arable land can be seen in the redundant ridge and furrow which can be detected by aerial photographs (Walters, 1992: Pls.20, 21, Kenyon, 1999:10). Such changes follow the decimation of the population during the fourteenth century, with pastoral farming offering greater returns for a reduced manpower. In southern Dean former arable land agglomerated

into large pastoral estates owned by outside magnates, documented in the Berkeley family records.

Livestock

The Berkeley estate in Dean had been established by the fourteenth century (Maclean, 1883:290). Lowered land prices and demand allowed expansion which complemented Berkeley's Cotswold interests. Communication was facilitated by ownership of both Purton and Aust passages (Maclean, 1883: 339,327). A market at Berkeley itself had already been established by Domesday (Morris, 1982:1.15). Flocks of sheep were kept in the fourteenth century on Berkeley manors in Over, Aylburton, Awre, Bledisloe, Purton and Yorkley, none less than three hundred head. 'Divers herds of goats' were also kept in manors adjacent to the Forest under a superintendant called the 'master goat' (Maclean, 1883 Vol.3: 301), in contravention of earlier bans on goats near the forest (Hart, 1955: lxvi).

Sheep farming had evolved in the forest during the thirteenth century; some were kept by the Constable of St. Briavels, who sold two hundred and forty five sheep in 1277. Tidenham had bought three hundred in 1272 (Min. Acc. 922/21/56 Hen III). Surnames, such as 'le Weaver' suggest a contemporary wool industry at Westbury (Stevenson, 1893:442) with field names of 'Shepherds' around Heyden. Sheephouses were recorded at Tintern Abbey's Modesgate and Woolaston Granges and the lords of Abenhall and Bicknor were ordered to make sheep folds to protect woodland (PRO. E 146/1/25, 1244-8). All had fulling mills nearby (Williams, 1986:307, Madge, 1903: 230-1). 'Shapridge', north of Flaxley Abbey indicates a monastic grazing area which eroded the local woodland. However, the bulk of Flaxley's thirteenth century flocks grazed outside the forest in its estates around Brimpsfield in the Cotswolds and at Dymock (ch.8).

Dymock was Flaxley's major grange, linked to the Abbey by a drove way; plough oxen over-wintered at the grange and grazed the forest in summer (Hart, 1987:61). Similar transhumance between Monks Farm (Flaxley's former grange) and Dymock occurs today. Dymock had a major market in 1253 (Finberg, 1955:61),

utilizing an ancient drove route out of Wales via Ross (fig.25a). Trade subsequently diminished through competition from the new Borough of Newent; this borough featured in a weekly stock round between Ross, Gloucester and Newnham (Farmer, 1991: 353). Stock from Dean pastures, such as Walmore or 'Mickle Mead' at Highnam could easily feed into the system. The trade route relied on a 'long bridge' at Over, which must have existed at Domesday, when it named the hundred. The Constable at Gloucester appears responsible for repairs, such as 1246, 1251 (*Lib.Rolls*; 1246-52: 62,346). The bridge would have enabled Over manor to exercise its right to graze two hundred and eighty sheep on city meadows (Elrington and Herbert, 1972:19).

Similar stock movement took place across the Wye, with inhabitants of Tidenham purchasing cattle in Wales; cows were bought from Monmouth in 1272 -3, with oxen coming from Cardiff, Caerleon and Chepstow. Oxen and cattle were also sent from Tidenham as far as Hampstead in 1295 (Farmer, 1991: 387). 'Driving droves' as a due in the Tidenham charters suggests a long-established tradition (Robertson, 1939:206-7). Faith suggests such practices designated the eighth century as 'the age of emporia', with bulk items carried long and short distances to markets, centres, minsters and ports (1997:109). A bridge to Chepstow was a vital link; remains of a Roman bridge can be seen at low water below St.Kingsmark (Waters, 1980:2-3). The post-Conquest structure occupied a site further south, linking to the medieval town. This bridge needed constant repair; seventy five oaks were used in 1234. It was destroyed by flood in 1306 and its disrepair 'prevented Tidenham people from taking their corn to Pullmeyrig' in 1311. A five-year levy on cattle, sheep and pigs funded repairs in 1399 with later funds, from a new bridge, appropriated to Striguil Priory in 1546. It remained a source of contention until an agreement was made which pronounced a central boundary, and allotted responsibility for repair to the estates bordering each side (Waters, 1980:2-4).

Settlement and trade

Chepstow's control of the Wye at Domesday (Morris, 1982: S.1) ensured its growth as a trading centre, and one to which southern Dean was orientated. Crossing points at

Bigsweir, Monmouth, Huntsham and Walford provided links into Wales, with Tintern Abbey running its own ferry to Dean estates. Most of the pills along the Severn had the potential for river trade. Cross-river routes can be identified at Beachley, Pighole, Horse, Grange and Cone pills in the south. Purton, Awre, Newnham and Framilode were major ones further north. Seven small ports were recorded in 1282 (Hart, 1987:

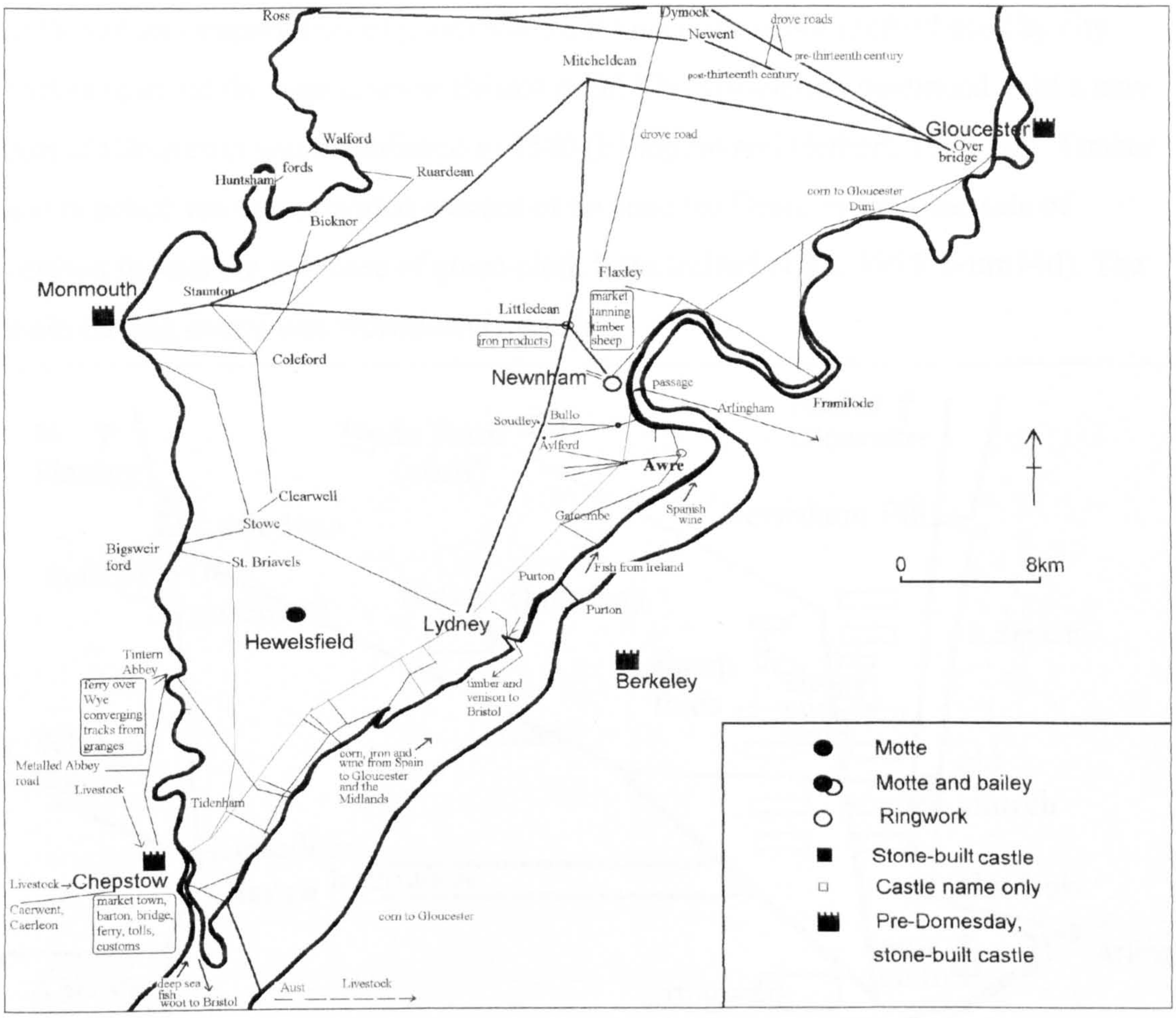


Fig. 25a. Routes, tracks and trade routes in and around Dean.

A schematic diagram of some of the communication and trade routes across Dean. A major north/south route from Hereford to Striguil (Chepstow) was recorded in the thirteenth century and would seem to have incorporated the route from Mitcheldean to Lydney, known as the Dean road.

Holloways linked major tracks to the river and smaller ones ran along the edge of the solid geology bordering the Severn. These provided an almost continuous riverside route from Tidenham to Gloucester. Trade routes ran both across and along the Severn; most pills had a landing-place.

Timber and venison passed through the Severn 'ports' of Dean to Bristol. Above Westbury similar goods were transported to Gloucester. Newnham was the Dean's major trading centre. Imported iron, wine and corn passed up the river towards Gloucester and the Midlands, with a major late-medieval trade in fish from Ireland at Gatcombe. Trade going 'to the wood' was recorded along the Wye at Domesday.

49) and river trade appears to have been the sole economy of Gatcombe, which traded as far as Ireland (fig. 25a). Local markets at Lydney and Alvington had limited success, with passing trade focusing on Gloucester. Foresters occasionally resorted to piracy, taking grain, malt and flour in 1429 (Green, 1995: 9-9). Only Duni records grain exports to Gloucester (Hart,1987: 48). Forest trade was associated with the port of Bristol and importation of goods via the Forest ports was a method used by city traders to avoid the high taxes in Bristol itself. The association continued until a new port of Gloucester was established in 1580 (Elrington and Herbert, 1972: 32). Timber and poached venison provided sources of revenue for Dean; in 1281 the sale of venison funded the purchase of green cloth from Ireland (Hart, 1955: lviim14d). The main trading centre was Newnham (fig.25b).

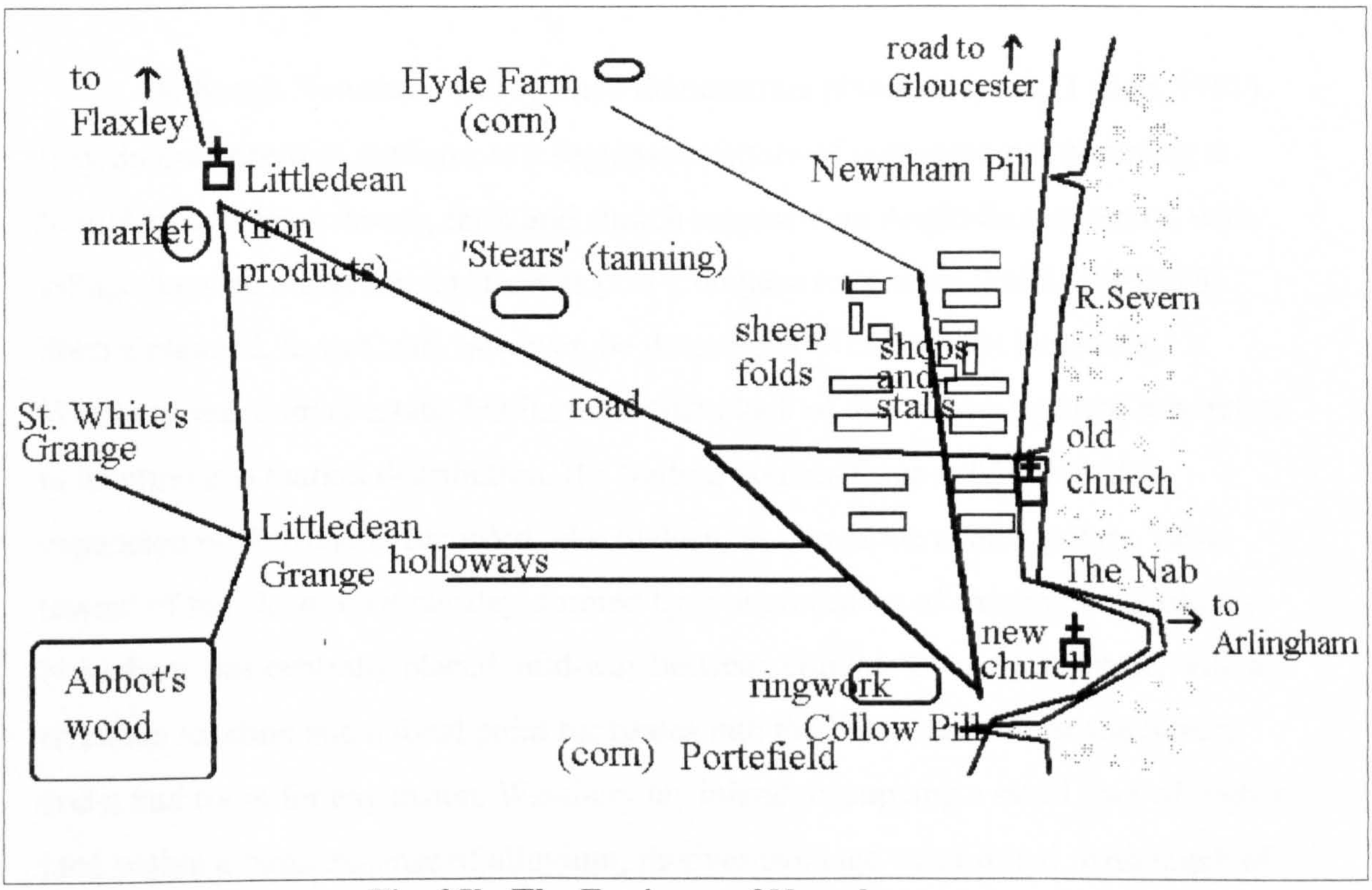


Fig. 25b The Environs of Newnham.

A schematic diagram of the layout of the medieval borough of Newnham and its relationship to areas of agricultural production, manufacturing, and trade routes via both land and river.

Newnham became a borough in the thirteenth century; shops and a 'shoprewe' were recorded (Stevenson, 1893: 459, 810,811,901) and the main street linked to the river crossing. Sheep folds owned by Flaxley and others lay next to 'fabricae' (workshops). Roger the woolmonger was recorded in 1220 with dyers mentioned in

the thirteenth and fourteenth centuries (Elrington and Herbert, 1972: 41). Arable estates and mills supplied the town from south and north at Portfield and Hyde (Hyde's cruck barn survives, Pl.10) and a tannery was recorded at Stears 1276 (Elrington and Herbert, 1972: 41-2). Although no evidence is available to detail the development of Newnham's sheep and hide industries, sixteenth century records suggest that it had remained an important part of the local medieval economy. In the sixteenth century the hide industry was run by a local trader named Sparkes, as an agent for Smythe of Bristol - his name survives at 'Sparkes Hill' near Bullo, suggesting that he may have used Bullo Pill rather than Newnham for his trade. Lower prices, six shillings and eight pence for calf-skins compared to ten shillings in Bristol, indicate economic inducement for continuance of the local trade (Vane, 1974: 253).

Although Newnham and Newent demonstrate planned layout, (Leech, 1981) they do not appear to conform to a suggested pattern of contemporary planning; a 'curial area' -manor-house, farm and church represent an Anglo-Saxon centre, with village housing along a main street as post-Conquest expansion (Faith, 1997:225). Such a planned, layout, can, however, be detected at Westbury. At Domesday Westbury was a royal estate, but its subsequent lack of major development may relate to location and market distribution. It's trading potential was eclipsed by the expansion of Newnham, recorded, like Lydney, as one of the contemporary 'new towns' of the Dean in Domesday, formed by reorganization of existing landholdings. Newnham was centrally placed, mid-way between Gloucester and Chepstow, with a riverside location and a focal point for routes into the Forest and across the Severn and it had room for expansion. Westbury lay inland, occupying a small spur of higher land within a large expanse of alluvium; its river frontage was limited, with much of it shared with Elton's common meadow.

Elton's territory was circumscribed by streams, in similar manner to the location of other individual settlements on land between the numerous streams entering the Severn in southern Dean. The pattern conforms to Gelling's observation of 'close delimitation by topography which constrains any significant re-location' (1992:180). This is not to suppose continuity of occupation of a specific site within a

territory. 'A *-ton* name appearing in an early charter or Domesday Book was describing an estate or manor rather than a single centre of habitation' (Dyer, 2002:14). Faith agrees; 'there is no precise physical definition of 'tun', but it would indicate ownership, by an individual, of a prescribed area within which he lived, only later developing into village status' (Faith, 1997:173-5). Such settlements are located along the Severn margins (fig. 26), each tun having a similar share of resources in a vertical arrangement of its territory from the upland woodlands to the river. Use of the genitive form of a personal name in association with 'tun' is common, such as Woolaston, Elton or Alvington, suggesting that naming was associated with the contemporary owner. It would represent a changing perception of occupation of the landscape from the earlier, topographical naming.

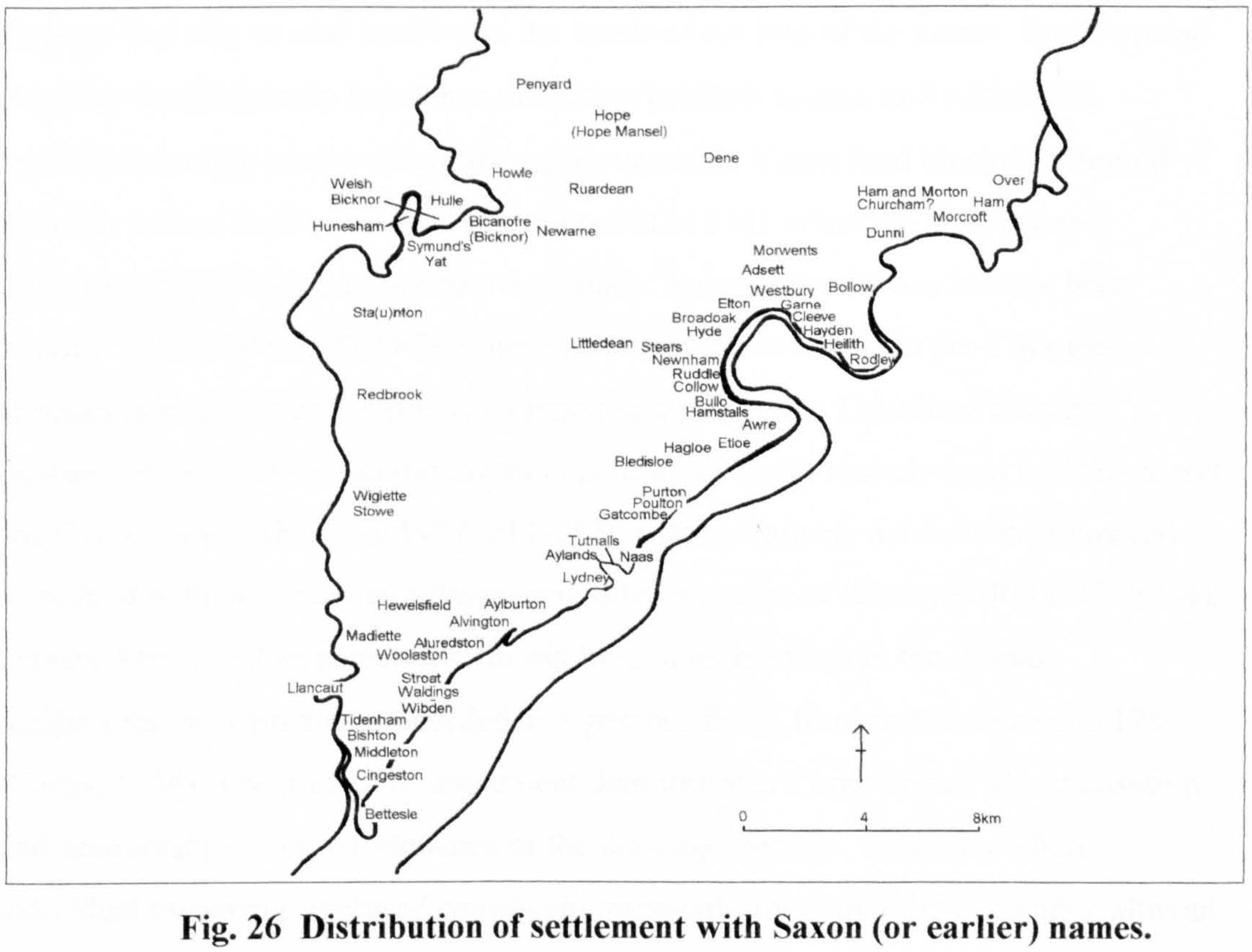


Fig. 26 Distribution of settlement with Saxon (or earlier) names.

Division of multiple estates (see ch. 4) had begun by the mid-eighth century and can be seen by the instigation of boundary clauses to define estate areas (Faith, 1997:153-4). Sub-manors, such Northington and Woodend at Awre and Waldings and Wibden in Tidenham, were established between the earlier centres as population increased. Some were later abandoned, such as Pomerton near Awre (Winters, 1700). Others, like Aylands and Tunstall (modern Tutnalls) (GROD421: M84) are

incorporated in modern Lydney (Elrington and Herbert, 1972: 65); Tunstall means a small collection of houses (Faith, 1997:174). A deep holloway, leading through Tunstall (and the author's land) into the twentieth century, ran from an interior manor at Archer's Hall (Rodley) to the Newerne Brook and ensured a link to the river. It was one of numerous holloways, which can be observed near the Severn margins, either abandoned in fields or bordering many of the modern lanes, all leading towards the river.

Deposition of alluvium and land reclamation in the river would have offered opportunity for change or expansion, plus possible problems of ownership. Apart from Hamcrofts (in Cornham) the only settlement on alluvium appears to have been the illegal purprestures in Walmore. Osbert of Westbury's twelfth century gift (ch.2) suggests that title to new land lay in the hands of the lord of the manor. Some overall planning would seem to have been necessary to allow access, and subsequent reclamation might render older landscapes unusable if new land blocked potential drainage routes. Such problems were recorded in 1541 when the highway and 'blakemasale'? had been flooded many times 'because the ditches had not been scoured' (GRO Dl300/ 77/987). Limited charters prevent data on pre-Conquest arrangements but ditch digging is included as a task in the Tidenham charters (Robertson,1939: 206). Similar duties appear in medieval records from both Somerset and Gwent Levels (Rippon, 1997: 214-217). Ditch clearance duties in the manorial records of both Westbury and Awre were often a source of dispute (GRO D2156/1-4). Flaxley Abbey had responsibility for ditching in its holdings in the Roman reclamation of Arlingham, recorded as 8 perches 8ft (c.16m) in *Westmarsh* in 1781 (Curtis, 1934). The precise measurement demonstrates a high degree of organisation and accountability for maintenance of the drainage systems, necessary where individual ownership replaced communal responsibility within the vulnerable alluvial landscape.

Individual family units had once been the basis of settlement, represented by the hide, which had recognised boundaries (Faith, 1997:137-140). In Somerset settlements bearing derivation of the word 'hiwisc' (hide) are taken to be the oldest

type of independent Anglo-Saxon farm, predating the open-field system (Costen, 1992: 65-83). In Dean the author found an example (Hyde Farm) north of Newnham (Morris, 1982: 32.10). It is typical of the genre, lying on the edge of the parish and unrelated to nucleated settlement (Faith, 1997: 139). The thirteenth century occupant was a prominent local landowner and benefactor, Hugo Charke, again consistent with later medieval ownership of a hide; by the twelfth century holdings of an entire hide were rare. Such a tenant was usually exceedingly well provided for and almost always a free man - a continuation of the 'gentrification of the hide' which began before Domesday (Faith, 1997: 139). Some fragmentation began in 1255 when the bulk of Hyde's estate was given to Flaxley Abbey, with 6.25 acres being reserved by the owner (Cal. Pat. Rolls 1225: (i) /74/23/504). Hyde Croft (modern Little Hyde Farm) recorded in 1240 (Stevenson, 1893: 176) may represent the reserved area. Although Hyde's farmhouse was given an eighteenth century date in the Victoria County History (Elrington and Herbert, 1972: 39), a timber framed core was revealed when the building was destroyed by fire in 1977 - after the present author's family vacated the premises.

While The Hyde appears to have maintained its integrity from the Saxon era other settlements display indications of a phenomenon suggested elsewhere as the 'mid-Saxon shuffle' (Faith, 1997:149) where communities abandoned one site in favour of a different one nearby. The names Upper Moorcroft, Upper Murcott and Lower Murcott suggest an origin in the Domesday manor of 'Murcott'. It is possible that the different sites reflect an early, dispersed pattern of settlements which together constituted the manor when the name was applied. This would reflect the situation at Sevenhampton in the Cotswolds (Dyer, 2002:14). However, Murcott lies near an area of alluvial reclamation in Cornham. Settlement may have relocated along the solid geology to a position more central to an estate enlarged through reclamation. A further expansion can be seen in the establishment of small crofts, at Hamcrofts, in the alluvium itself.

Similar movement is apparent at Naas. Its topographical name, meaning promontory, suggests early Anglo-Saxon settlement; there was a fishery in Domesday (Morris, 1982: 1.54). Earthworks, noted and surveyed by the author, lie above the

only extant fishery and may suggest the contemporary location (fig.27a). A deep Holloway (where a small sherd of medieval green-glazed pot was found by the author) runs downhill from the settlement, through ridge and furrow, to Plummers Brook. This watercourse would seem to form a boundary (Kenyon, 2000: Fig. 1) in common with the pattern of manorial delineation noted above.

The present Naas Court Farm, west of the earthworks, was recorded as a hall and farm by 1443, and may be the one recorded in 1322 (Elrington and Herbert, 1972: 63); its medieval barn was destroyed in the 1950s. To its south a further, larger property, Naas House, was formerly dated to the seventeenth century (fig.27b). Dendrochronology on its timbers provided a combined site chronology of 1390-1591 (Howard et al. 2000), but with earlier, twelfth century, timbers used in parts. Naas was in Berkeley ownership from 1361, and records suggest contemporary renovation of newly acquired properties - oaks were used for construction at Awre (Maclean, 1879: 339,190). It suggests that Naas House was the earlier manorial site with Naas Court matching the fifteenth century farm description.

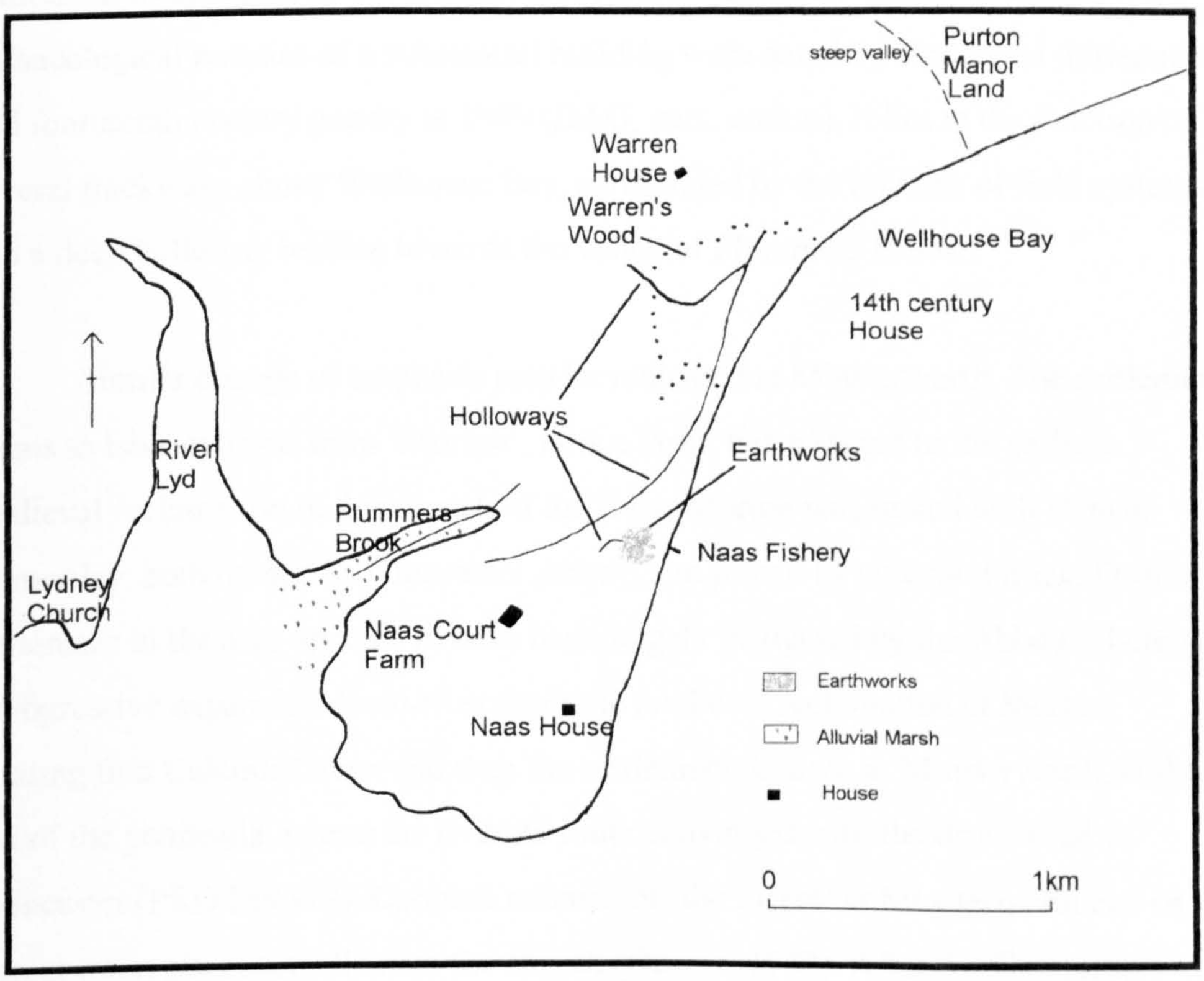


Fig. 27a Archaeological site distribution on the Naas peninsula.

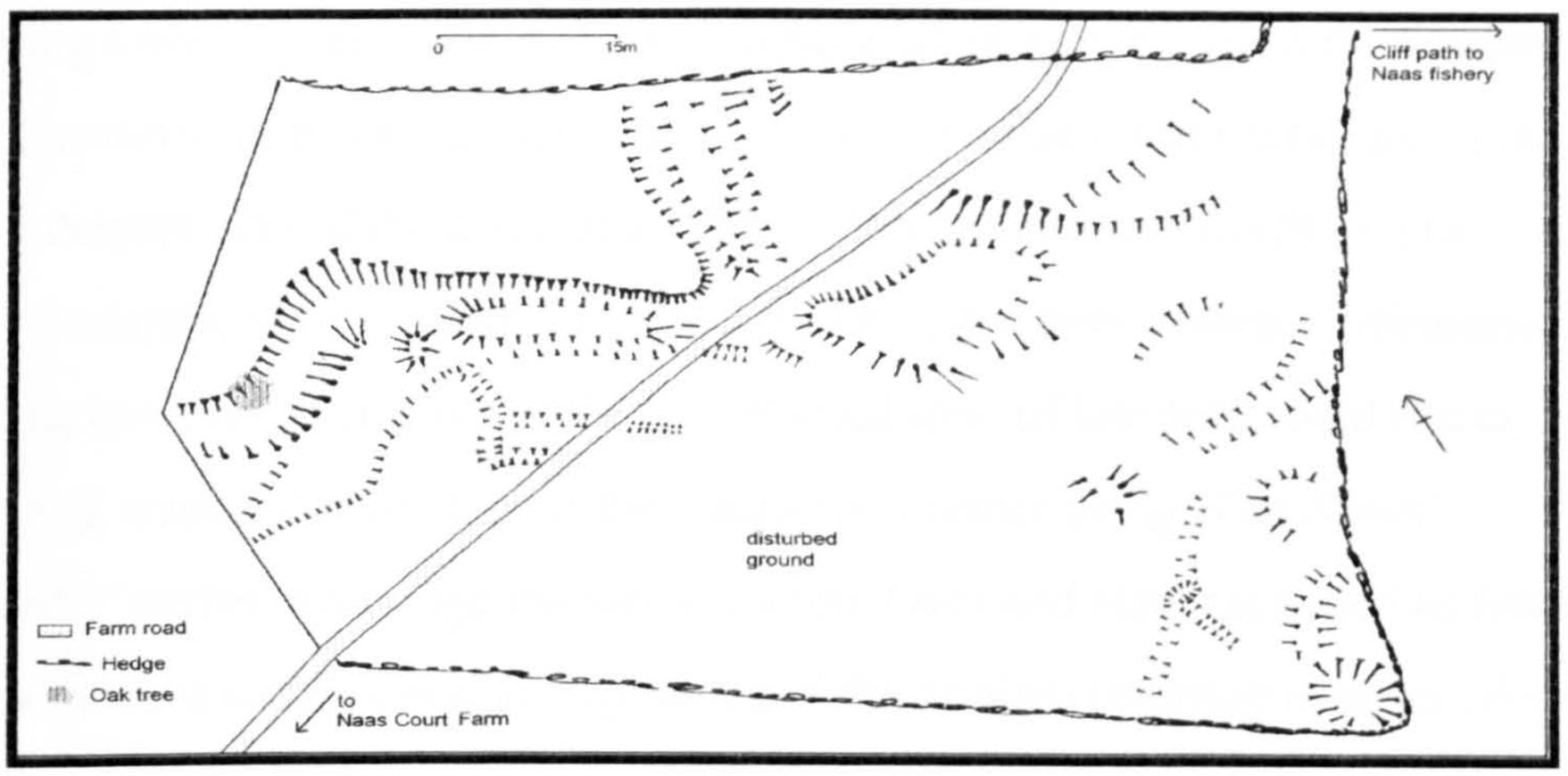


Fig. 27b Earthwork Survey at Naas.

Location of the settlement sites of Naas suggests changes in emphasis from a fishing economy to increased arable capacity and removal to a more central location as its territory increased through reclamation of the alluvium in the Lydney basin. The manor-house was enhanced during the fourteenth century and the one hundred acres of arable, which remained in demesne in 1444, were managed from that site. A southern drift of settlement at Naas may be one factor in the creation of a new settlement to the north of the promontory. Now obscured by Warren's Wood, archaeological remains of a substantial building were dated by associated thirteenth and fourteenth century pottery in 1999 (DAG, pers. comm). It lies at the junction of several trackways above Wellhouse Bay, surrounded by the remains of field systems and a deep holloway leading towards the valley of Plummers Brook.

Similar change of emphasis may be indicated at Minsterworth. The settlement seems to have evolved from 'Morton', now a farm, but adjacent to the earliest medieval reclamation in this stretch of the river. Morton was linked with Ham at Domesday, both owned by Gloucester Abbey, and joined by an extant track. Further settlement in the area appears to have been largely instigated by the Abbey. There was a progressive expansion down-river from the medieval reclamation at Morton, creating first Calcotts Green and then the settlement, known as Minsterworth, at the end of the peninsula, where the riverine route converged with the drove road to Gloucester (PRO MR379). Cobbled remains of 'the Street' at Minsterworth can be seen at intervals, especially near the church (Davies, 1952). After the Conquest Gloucester Abbey created a new manorial centre on high ground at Churcham. The

straggling lower settlement would seem to have taken its name from the Minster's warth (pasture). Widespread local use of this topographical term may seem a more likely interpretation of the place-name than a derivation from 'worth', a place name widely researched in the Southwest (Costen, 1992, and pers. comm.). Minsterworth's layout is, however, indicative of the 'interrupted row' of late settlement (Faith, 1997:151), arranged in relation to the roadways. Further along 'The Street' Gloucester's other river-edge manors at Linton, Over and Ham remained as farms under a new manorial centre at Highnam and the original riverside route to Gloucester was relegated to a back lane.

Conclusion

The agricultural landscape of the Forest of Dean does not appear to differ from contemporary agriculture elsewhere, other than in scale. It contained the same elements of arable and pastoral farming organised on similar lines: there were infields and outfields, pasturage, meadows and varied arable crops, mills, individual farms and large estates, common fields and three field rotations, transhumance, drove ways and markets, both within and outside the Forest itself. Although there was self-sufficiency Dean was not an isolated economy and it supplied both Gloucester and Chepstow with produce, and was affiliated to Bristol trading networks. However, its geography offered different choices to the agriculture of England's heartlands. There was a peripheral emphasis on settlement.

Political instability with the Welsh, industrial activity and soil fertility concentrated agriculture on the Severn littoral. This was reinforced by the existence of Royal Forest on the west during the later medieval period. Expansion in the agricultural regime was largely focussed outwards into the Severn alluvium. The resource was multifunctional, supporting pasturage, arable and meadow, although again no different physically from other similar areas around the Severn or other marsh areas. While expansion would seem logical in respect of medieval population increase, much of the land reclamation pre-dated this period, and would seem to have provided ample capacity for a Domesday population of less than 2.5 per square mile.

Transformation of the Severn alluvium, by creation of seabanks, must have had a specific purpose. Increased yields noted in the Somerset records would suggest attraction to fertile soils rather than sloping fields where nutrients can be leached and washed off. The author notes that, during summer, ridge and furrow at Stroat dries rapidly, its surface becoming hard and cracked. Although this relates to modern conditions the lower medieval tidal range might be expected to have allowed more rapid drainage. Absence of moisture is detrimental to crop growth and yields. Control, rather than exclusion, of water may therefore have been the aim of seabanks.

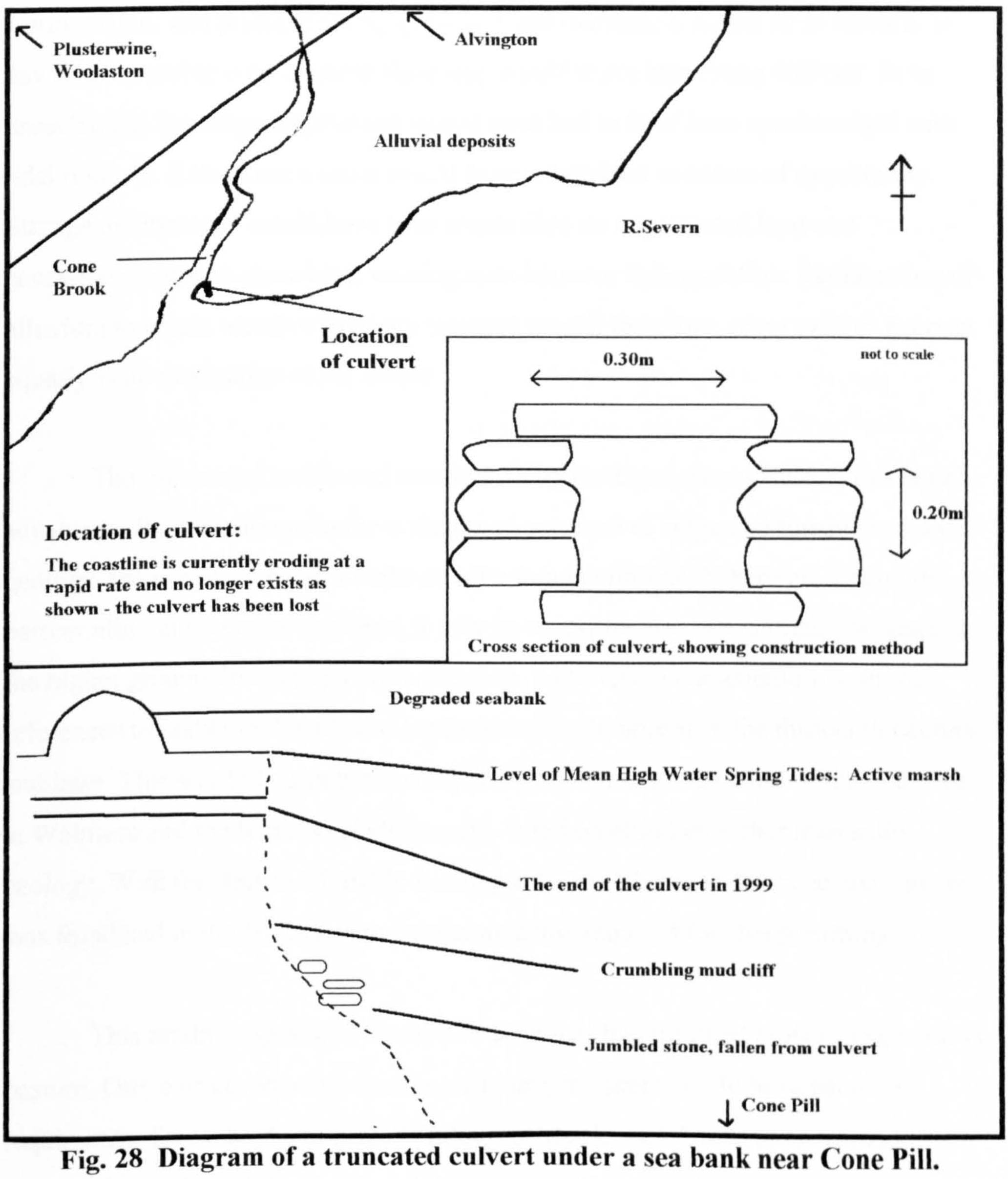


Fig. 28 Diagram of a truncated culvert under a sea bank near Cone Pill.

The example of a culvert in a local alluvial context, as found by the author, remains unique (fig.28); others may have existed or a small gout could have been made, within a seabank itself, to control water in the fields. If fields dried too quickly, management of such structures could have allowed tidal water to seep into the field from the active marsh, or a drainage channel, and flow through the furrows. This would have allowed water to rise through the soil slowly from below without knocking the plants over and damaging them. Such management would be similar to that used for water meadows, where water is deliberately channelled into grassland to warm the soil and promote spring growth. Tidal inundation would be as harmful to hay as to an arable crop because flattening would make harvesting difficult. In an unreclaimed landscape haymaking would have had to have been synchronised with tidal regimes. Rain at such times would have wasted the windows of opportunity. Storage in haystacks would have been impossible on unprotected land and necessitated storage elsewhere, wasting man-hours in transportation. Reclamation of alluvium to create meadow (and dry storage) would, therefore, seem to have been an equally valid motivation as for arable.

The mixture of arable and meadow along the Dean shores reflects this equal advantage. By comparison to the widespread presence of ridge and furrow on solid geology, the use of such earthworks on alluvium is minimal. Where present on the narrow alluvial shores of the Dean, it may be an expression of a shortage of space on the higher ground due to population pressure. Although documentation is scarce, references to arable in the alluvial landscape seem to appear in the thirteenth century and later. This would fit a pattern of expansion noted in the creation of moated sites at Walmore and the location of Hamcrofts - sited on alluvium rather than solid geology. With the decline of arable farming after the Black Death, ridge and furrow was fossilised in the landscape under the meadow required for sheep farming.

This might suggest that the Severn alluvium had returned to its primary use as pasture. Drove roads demonstrate this early use, but there would have been no requirement for seabanks to exclude tides; nor would such banks alone provide barriers for cattle and sheep. The tidal regime produces its most devastating tides

during the spring - the natural season for young to be born. Reclamation could have provided an area for birthing and protecting the young animals which might have been swept away by the tide, in addition to a dry retreat for the adults. During time spent along the Woolaston shoreline the author found three young animals, either already drowned or trapped in the mud - modern examples of such losses. A whole herd had to be rescued by emergency services in November 2001 when extreme tides flooded their inland field, and fear prevented their moving. Reclamation might therefore be seen, in some cases, as the creation of protected pasturage.

Animal husbandry may provide an alternative suggestion, especially for the early reclamation at Walmore. Seabanks could represent causeways to move stock (or people) from one area to another. Parallels could be drawn with the various forms of track found in the Somerset levels to link areas of high ground, although these were dated to earlier periods (Coles, 1986). Changes in elevation which bound the 'Roman' reclamations round Rodley are all associated with roadways: their role of seabank which provided agricultural areas might therefore be secondary or incidental. Whether ease of passage over wet areas was either the motive for construction, or opportunist use of the existing structures, it would have facilitated movement within the territory of Westbury. The recent discovery of a probable Roman villa at Chaxhill (Putley, 1999: 25) would provide the original focus for such a territory. When linked to the track which skirted the solid geology at Minsterworth the riverside route around Westbury provided access to Gloucester. It may also have linked Rodley to inland resources which were not available locally; the northern end of the Walmore seabank accessed an area of woodland and waste. This woodland does not appear to have been cleared until the twelfth century, at a time when deposition was creating new pasturage along the Rodley shores. An initial use of this route may, therefore, have been to exploit a timber or grazing resource which was likely to have been limited in the populous Rodley peninsula itself.

At Rodley, routes terminating at the Framilode river passage would have offered the opportunity for trade with the more densely-populated Cotswolds. Rodley and Awre are the only places along the Severn where gently inclined areas of solid

geology converge on both sides of the Severn, facilitating passage for heavy goods. Apart from the opportunity to transport iron, which has been archaeologically attested (ch. 5), such links may have provided a motivation to increase agricultural production in the immediate vicinity of the crossing. During the post-Roman period external markets are likely to have decreased. In Domesday both Rodley and Awre appear to have maintained the highest concentrations of population and production in Dean. Given such a density of population, seabanks, which appear to be created by individual enterprise, could be seen in the same light as the ditching around individual holdings on the solid geology - to define territory as boundary markers in an otherwise featureless part of the landscape.

The earthworks along the estuarine landscape may, therefore, have had a variety of reasons for their initiation. Use, management and perception of the bounded areas may have changed over time. Clearly the existence of managed, reclaimed land contributed to the overall wealth of the owner, or owners, of such land, as in Allen's model. However, in Dean the reclamations were small and appear to enhance natural processes or protect land which was already being used, rather than being a direct attempt to create new land. Such a protective role is particularly apparent in medieval management of existing reclamations; depth below contemporary tide levels caused problems of waterlogging, ditching, and maintenance of new or higher embankments. Looked at in the long-term, short-term gains for those who initiated such projects have been offset by the long-term problems for succeeding generations. In Dean those areas in the middle estuary which were not subject to early (Roman) land claim would have caused less management problems during the medieval period and into modern times than inner estuary reclamations, such as Walmore. In the latter secondary, internal 'reclamation' was necessary to maintain productivity against the forces of nature as the tides rose during the medieval period. The role of reclamation in medieval Dean has more in common with Rippon's model of defensive, rather than offensive, initiatives (see above). Although they ultimately changed the physical landscape of the Severn, seabanks represent individual responses to differing contemporary circumstances.

The settlements, which housed the local populations, were equally varied. Old and new forms of land ownership co-existed, modified and developed in a landscape which became increasingly crowded along the Severn littoral until halted by the decimation of the population in the fourteenth century. The pattern of the personnel who modified the riverine landscape was equally varied. Monastic involvement appears consistent in the inner estuary, with Gloucester Abbey extending and managing much of the Cornham area from the eighth century; Tintern Abbey and Llantony Priory similarly managed their riverside estates during the post-Conquest period. The endeavours of small settlements or individual landowners elsewhere seem, ultimately, to have become subsumed within areas of multiple ownership or common land. There was no economy entirely dependent on the alluvium and it remained as an adjunct to agriculture on the solid geology. The changing estuarine landscape reflects the social, economic, and political changes which defined the rest of the medieval Forest of Dean, both in a national and local context.

CHAPTER 4: THE POLITICAL LANDSCAPE

Introduction

At Domesday the area of Gloucestershire west of the Severn extended into modern Wales, including the castle at Chepstow (fig.29). There were clear cultural differences within this hybrid administrative unit. West of Chepstow landscape management was ordered on the Welsh pattern with reeves and vills of multiple estates; ploughlands were measured in carucates (a variable unit measuring perhaps between 80-120 acres). Dean organisation displayed a Saxon base in its shires, hundreds and hides, but it too had had an earlier Welsh background.

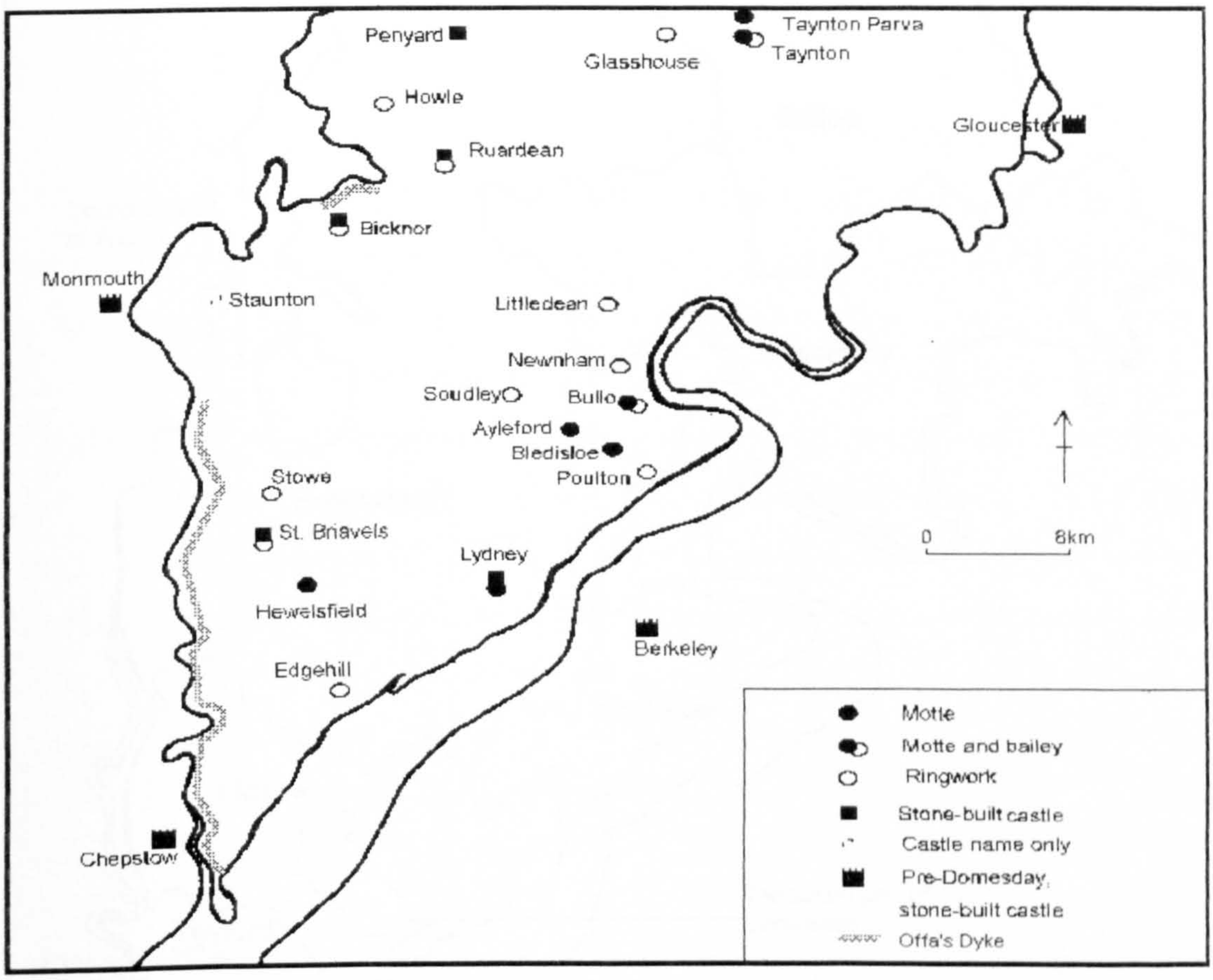


Fig. 29 Distribution of defensive structures in the Forest of Dean.

Pre-Conquest Political Organisation: Hundreds

Shires were a West Saxon system, designating areas of administration centred on royal estates. They were imposed, during the tenth and eleventh centuries, on to an earlier West Midland organisation, after the hegemony achieved by Wessex (Gelling,1992:140). Hundred divisions within the shire represent areas of local government, probably related to provisioning of personnel for tenth century military needs, but possibly incorporating earlier units (Gelling, 1992:142). However, the

distribution of Roman villas (fig.2) does not suggest any obvious correlation between the hundreds and Roman landscape organization. From south to north, the seven Dean hundreds recorded in Domesday were Tidenham, Twyford, Lidenei, Bledisloe, Westbury, Botloe and a small part of Longbridge Hundred (west of Gloucester). The central area of Dean was simply designated 'forest' but its inclusion within the diocese of Hereford suggests its earlier connection to Bromsash hundred which retained a detached part at Alvington (fig.30).

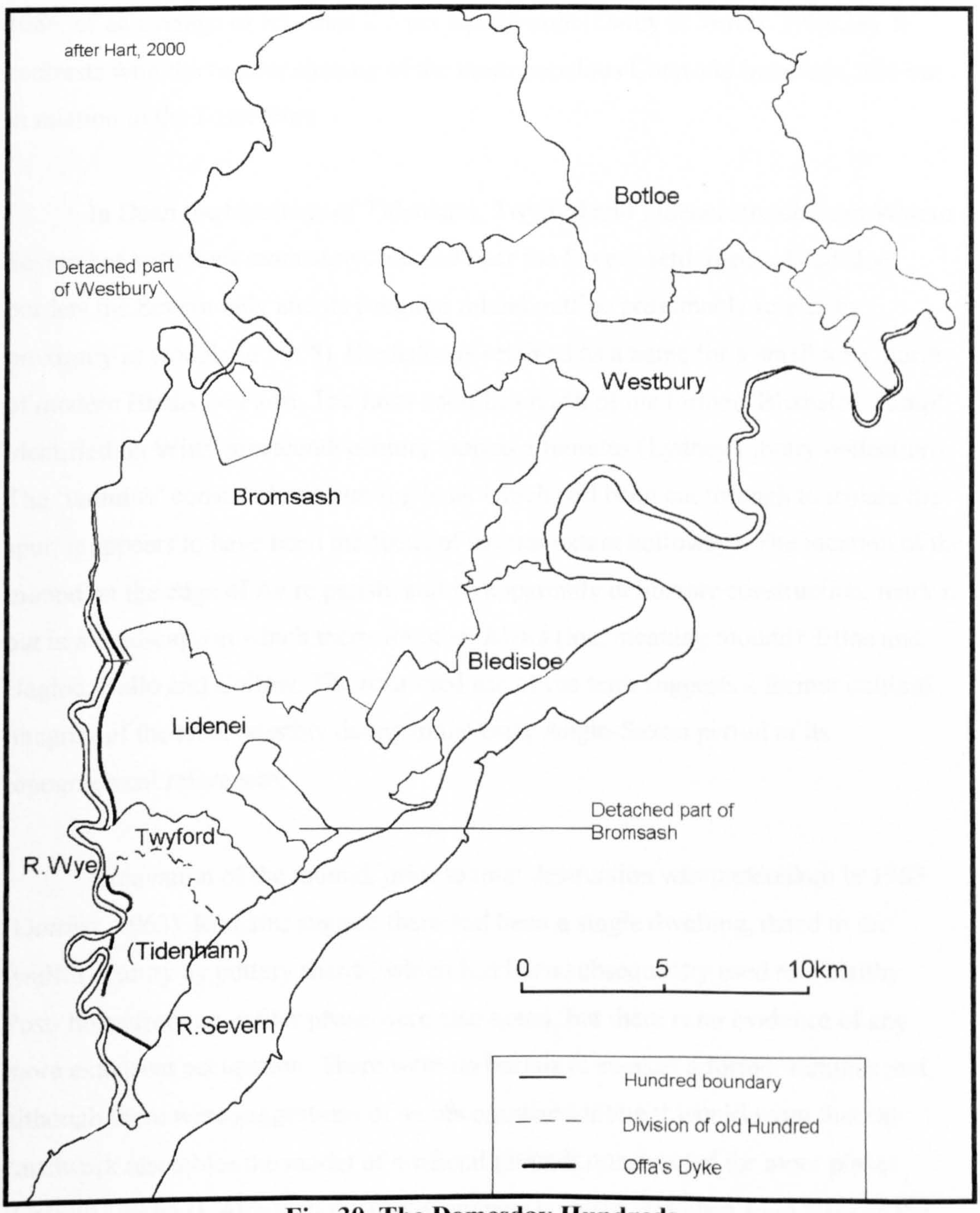


Fig. 30 The Domesday Hundreds.

A model proposed by Anderson (Anderson, 1939) suggests that hundreds which are based on manors originated later than those whose names derive from their moot stow, or administrative meeting place. This hypothesis would place the majority of the Dean Hundreds, other than Tidenham, as residual from an older landscape. Their names refer to topographical features: trees, mounds, islands and water crossings - an early mode of place-naming. The irregularity of the boundaries might also suggest incremental growth related to the sparse Dean population recorded in 1086, of an average of less than 2.5 per square mile (Darby & Terret, 1954:24). It contrasts with the regular spacing of the more populous Cotswold hundreds, laid out in relation to the Fosse Way.

In Dean the hundreds of Tidenham, Twyford and Lidenei stretch from Wye to Severn but with their moot stows located near the Severn settlements. Bledisloe borders the Severn only and its irregular inland outline presumably relates to proximity to woodland (ch.5). Bledisloe is retained as a name for a small area, north of modern Bledisloe Farm. The farm itself lies north of the former 'Bledisloe Tump', identified on Witts' nineteenth century map as a tumulus (Lydney Library collection). The 'tumulus' consisted of a curving bank which had been cut through to isolate the spur; it appears to have been the focus of several extant holloways. The location of the mound on the edge of Awre parish, and its apparently deliberate construction, mark it out in a landscape in which there are other *hlaws* (loe, meaning mound): Etloe and Hagloe, Bullo and Collow. The restricted use of the term suggests a former cultural integrity of the area, possibly dating to the early Anglo-Saxon period in its topographical references.

Excavation of the mound, prior to total destruction was undertaken in 1963 (Dornier, 1963). Remains suggest there had been a single dwelling, dated to the twelfth century by pottery sherds, which had been subsequently used as a smithy. Post- holes from an earlier phase were also noted, but there is no evidence of any more extensive occupation. There were no burials to suggest a former tumulus and, although there were suggestions of an uncompleted motte it would seem that the earthwork resembles the model of artificial mounds constructed for moot places (Gelling,1992:52). Although the post-Conquest hundred stretched from Naas in the south to Ruddle in the north (including Awre), Domesday records that Awre had

formerly 'had only three members', Purton, Etloe and Bledisloe with Naas newly added (Morris, 1982:1.30), suggesting that there was some contemporary reorganisation.

Bledisloe itself would represent a geographically central position for the original hundred unit and its limits would seem to correlate to the riverine promontories of Portlands Nab in the north and Wellhouse Rock in the south. Other hundreds also appear to be defined by headlands: Westbury stretched north from Portlands Nab to the promontory in central Cornham, Lydney ran from Wellhouse via Naas to the Guscar rocks which provided the northern termination of Twyford. Twyford and Tidenham together would have extended to the promontory marked by the tidal island of St. Twrogs at the confluence of Wye and Severn. However the boundary between them seems problematical.

Tidenham's name suggests a later foundation than its topographically named neighbours (above). Given its geographically isolated location it must have separated from its only neighbour, Twyford. This would conform to the developmental pattern in Anderson's model (Anderson, 1939: xvii). At Domesday Tidenham's thirty hides contrast with only eight in neighbouring Twyford; the latter consisted of Woolaston, the discrete plateau area of Madgetts and some land in Tidenham. The location of, or reason for, this apparent dual ownership of 'land in Tidenham' has never been explained. Grundy's interpretation of the tenth century bounds of Tidenham (Grundy 1935: 237-253) places the boundary of Tidenham's northern tithing of Stroat (bounding Twyford) south of the Horse Pill headland. This would correlate with the modern parish boundary of Woolaston (formerly Twyford). If the author's reinterpretation (below) is correct, the tithing boundary ran to the south of the Guscar Rocks. Such a boundary would not have given Twyford a viable river frontage for riverine resources.

The author suggests, therefore that Twyford retained the northern part of Stroat tithing down as far as the headland. Such an arrangement would preserve the economy of the smaller, predominantly inland hundred, giving it sole ownership of the Black Brook (for mill-power), the pill (as a port) and a river frontage for fishing.

Tenth century charters record such a mill at Twyford in Domesday, but no mill for the agriculturally productive Tidenham (Sawyer, 1939: 207). It would suggest that a former economic landscape was maintained in spite of the political changes. The Horse Pill headland would have provided a notable landscape feature to designate the political division between the hundreds, comparable to the pattern of boundary markers of the other riverside hundreds. Twyford therefore owned land still technically 'in Tidenham'. Such a hypothesis could explain the later behaviour of Tintern Abbey who, as lords of the manor of Woolaston, assumed ownership of this 'shared' area, termed as waste. It was developed in the thirteenth century (ch.8), but Tintern was forced to give the tithes to Tidenham. However, the affiliation of Tintern's new grange to the Abbey and its church at Woolaston, created a religious integrity which provided the basis for the modern parish boundary.

Donation of the manor of Tidenham to Bath Abbey in the tenth century (Grundy, 1935: 237-253) could have been a point of administrative schism of the old hundred. Economic prosperity may have been a factor enabling such re-organisation of the Dean hundreds. Although Bledisloe hundred appears to have remained intact the term 'the hundred of Awre' occurs during the post-Conquest period. At Domesday Awre recorded a higher than average population for the area and therefore may have been at a point of transition to a separate identity similar to that at Tidenham.

Further north a diminution of Westbury hundred was recorded in Domesday, with losses of its northern holdings around Newent. Westbury is located near Rodley, like Awre one of the most valuable of the Domesday holdings. The settlement of 'Westbury', which gave its name to the hundred, differs in name from the predominance of topographical place-names around the Rodley peninsula. This suggests that Westbury may have been a later foundation, or changed its name. Such a name would be comparable with Sudbury (Sedbury) in Tidenham, each near, though not adjacent to an important river crossing. Sudbury was not mentioned in the highly detailed Tidenham charters and its name must, therefore, post-date 945. It provides a potential dating for Westbury. Both may have been related to a series of burhs set up by Edward the Elder during the tenth century, establishing the hegemony of Wessex.

Language and the influence of Mercia

The majority of place-names in Dean have Anglo-Saxon derivation, but a former Welsh presence can be identified through field names and the local dialect: its peculiarities 'can only be explained by the descent of its speakers from speakers of Welsh' (Fenn, 1968: 339). Populations east of the Severn spoke a West Saxon dialect, and its lack of impact on local, Dean, speech suggests a separate history. The Llandaff charters record attempts by the West Saxons to push westwards, both occupying Gloucester (in 577) and attempting to push into Wales (Walters, 1993:124). Although this may simply be propaganda, the area around the Severn was clearly subject to a power struggle at the end of the sixth century. By 628 Mercian control had supplanted that of the West Saxons and extended along the eastern shores of the Severn as the sub-kingdom of the Hwicce.

The unique nature of 'Forest' suggests longevity of a cohesive group in the area which was modified, though not replaced, by contact with Mercian culture. There are clear differences between it and the language of north Gloucestershire which has similarities with east midland dialect (Heighway, 1987: 39). This could be explained by the existence of a separate kingdom in north Gloucestershire, but is not compatible with Heighway's identification of the Dean as part of the Magonsaete. She proposes the Magonsaete as a tribal sub-group of the Mercian kingdom, occupying Herefordshire, west Gloucestershire and south Shropshire: its boundaries were preserved as the diocese of Hereford which was created in 675 (Heighway, 1987:39). Hooke has suggested that the Magonsaete were based towards the Shropshire end of the proposed 'kingdom' (Hooke, 1998:43). Hooke's identification was based on a discrete group of place-names which derived from the personal name 'Merewalh', the seventh century ruler of the 'Hecani'. During this century the name of this tribal group apparently changed to Westerna and then Magonsetum (Walters, 1993:125). This argument, based on leadership, appears to agree with Gelling's observation; sub-kingdoms incorporating 'saete' names indicate cohesive groups rather than denoting the area in which they live (Gelling, 1992:140). The author does not find these arguments convincing, particularly noting the origins of the kingdom of the Wentsaete, to the west of Dean; this group takes its name from the Roman town of Venta Silurum (modern Caerwent).

One town offering a potential root of Magonsaete could be the Roman town of Macatonium. Precise identification of this town remains conjectural, but archaeological evidence attests to a Roman town at Dymock. Gethyn-Jones (1991: 97) suggests that the location and interpretation of the Ravenna Cosmography by Richmond and Crawford identifies this settlement as Macatonium'; the cosmography suggests origins in a river name and the only possibility would be the modern Leadon, on which Dymock stands. Although this derivation is not accepted by Rivet and Smith (1979:405) a Roman town would offer the potential for a far older derivation of the tribal name. It would place the focus for the Magonsaete further south than that proposed by Hooke, though not dispute the general area occupied by the tribal group.

Imposition of an Anglo-Saxon 'saete' name would imply southern expansion of Mercia towards Dymock by the seventh century. If the Dean has been included within this sub-kingdom of the Magonsaete, the total territory would have been comparable in size to that of the Hwicce on the east of the Severn. Such a territory would, however, exceed the size of areas normally associated with 'saetae' names. This category has a linear distribution along the Welsh borders and size is similar to that of hundreds (Gelling, 1992:118). Location of one of these, the Dunsaete, has not yet been identified, although it is known through a tenth century document 'The Ordnance of the Dunsaete' (Noble, 1983:103-9) (appendix 2).

If the Magonsaete occupied an area down to Dymock the Dunsaete must lie to the south, to complete the name pattern in the only vacant area along the borders; the terms of the Ordnance place them in proximity to the Wentsaete, but separated by a river (app.2). Walters places them in southern Herefordshire and part of the Dean. Gelling also proposed Herefordshire, but later amended this assessment to the area around Monmouth, on grounds of size (Gelling, 1989:199). Taylor's suggestion included Archenfield (Walters, 1992:132-3), but could be ruled out on both size and place-name; almost all references state that Archenfield (an area east of the Wye, north of Monmouth) is derived from Ergyng which itself derives from the Roman Ariconium (Walters, 1993:119). It would be atypical for it to change to Dunsaete and then revert to Archenfield. Such a reversion would be even less likely as the proposed location of Ariconium (below) lay outside the contemporary territory of Archenfield.

Noble places the Dunsaete in the area from Redbrook through Ruardean, Hope Mansel, Aston Ingham and Mordiford, represented by the designation of the Deanery of Ross (Noble, 1983 17). This area forms part of a territory described in documents as 'the Red Hundred', which extended across Dean as far as Gloucester (Coplestone-Crow, 1989:2-5); this was once part of Ergyng territory and included Weston-under-Penyard, the location of 'Ariconium'. Identification of Ariconium has been based on eighteenth century finds of first and second century Roman artifacts and a similarity of distance from Gloucester and Monmouth to that described in the Antonine Itinerary - fifteen and eleven Roman miles respectively (Rivet and Smith, 1979:175). Modern archaeological investigation has revealed it as an iron-processing area (ch.6). Although origins of the name Ariconium have not been identified the prefix, meaning 'in front of', appears to relate to sites near natural features such as wood or marsh (Rivet and Smith, 1979: 257-9).

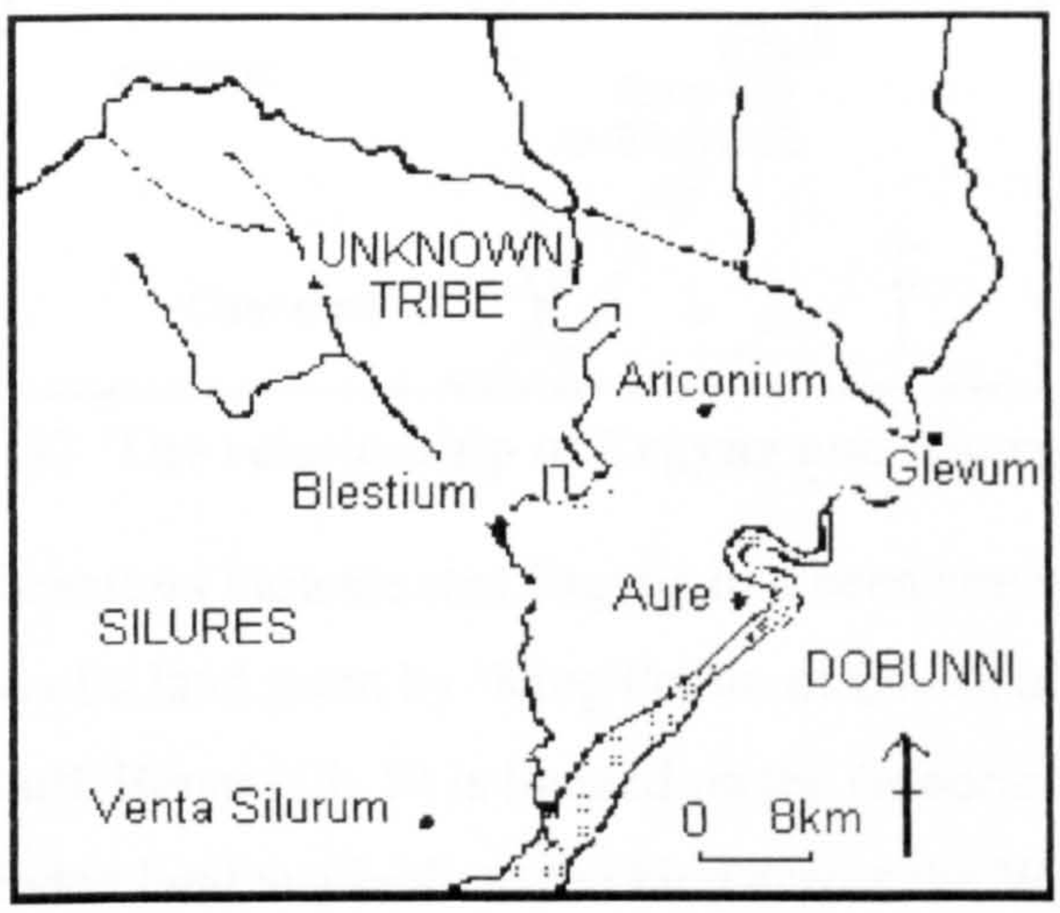


Fig. 31 Territorial organisation in the Roman era.

The Wentsaete are named after a surviving town and it might seem strange to name a post-Roman tribal group after an iron-processing area, which on current archaeological evidence, had been non functional for at least two centuries. Rivet and Smith suggest that the name survived as 'Yartleton', c. 3miles to the north, but this does not appear to represent a site of any significance. The author also notes a similarity with the place-name Awre. No firm explanation has been found for this place-name, though the element 'alre' is proposed by the EPNS as an original root (Smith, 1965: 250); its meaning of 'bitter land' in an area of notable agricultural production seems highly unlikely. Identification of Ariconium rests, at present, on

relative distances from Monmouth and Gloucester in the Itinerary. Awre would fit the model equally well. A high-status Roman site has been identified at Blakeney, initially dated up to the mid-second century with unsurveyed earthworks extending down the valley to Awre. Finds around Awre itself extend occupation dates into the fourth century (Walters, 1993: 77-8), but maintenance of the seabanks demonstrates continuity until the present. More archaeological investigation is needed, but retention of this name would suggest that territory associated with Ariconium (Ergyng) extended across Dean.

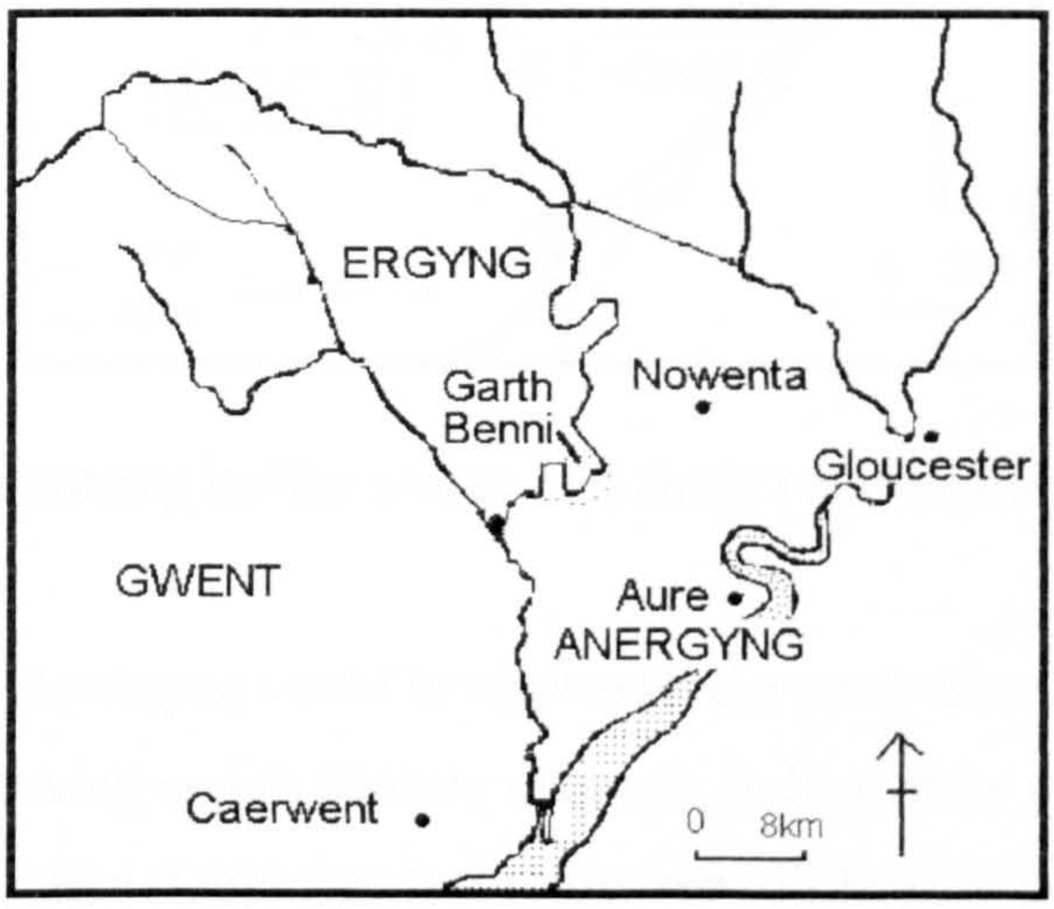


Fig. 32 The relationship of Ergyng and Anergyng.

The Llandaff charters indicate that Ergyng had been annexed to Gwent by the sixth century because of a land grant by 'King Peibio of Gwent and Ergyng'. His monastic house of Garth Benni (Ch. 8) is located on the Goodrich peninsula in Archenfield and included land available to the king across the Wye in Dean (Davies, 1978:124-5). Land grants in the Llandaff charters suggest that such authority extended down to the confluence of the Wye - King Morgan gave Istrat Hafren (in Tidenham) to the Bishop of Llandaff in 703 (Davies,1978: 173). In addition to Ithel's weir on the Wye, a field near Buttington in Beachley, illustrated on the tithe map, also bears the name of this ninth century king (Gwatkin, 1993). Llandaff's see stretched from here into Archenfield and northern Dean, seen through the Garth Benni dedication (above). A single note in Rees' charter translations, does, however, suggest that the see consisted of individual parts (hundred wards) apportioned to the founder's five sons (Rees, 1840:311). These were: The Bay of Severn, Mochros and the Island of Terthi (Barry) - all in Wales - plus Ergyng and Anergyng. The term Anergyng is unexplained but would suggest a sub-grouping of the original Ergyng territory. Apart

from (Welsh) Archenfield, the only other area in the vicinity over which Llandaff had control is the Dean. With Ergyng to the north of Dean the author proposes that Anergyng territory occupied southern Dean (fig.32).

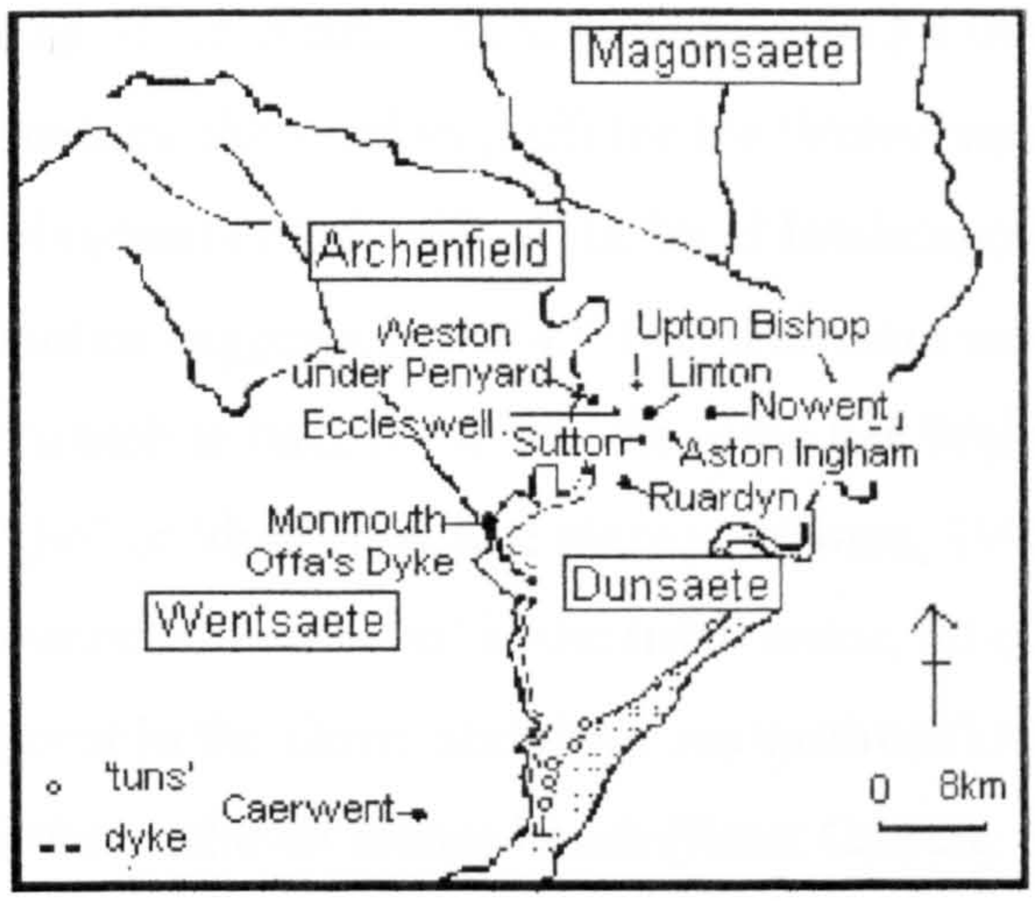


Fig. 33 Eighth century buffer states and their relationship to Offa's Dyke.

An 'English' Anergyng could have provided a convenient basis for division in Ergyng territory following eighth century changes, indicated by a cessation of grants attributed to that kingdom. Land was lost to the see of Llandaff during this century, through Saxon incursion, according to the *Liber Landavensis* (6.24). The property was eventually restored to the former owners 'although destroyed and depopulated by foreign people' (Walters, 1993:127). In 853 Mercia again subjected the Welsh with the help of Wessex, and Lydney was given to Aethelred's son-in-law (Finberg, 1957:2-3). Tidenham was restored to Llandaff by 878 during a period when the Welsh kings were beginning to ally with Wessex against first the expansionist policies of the king of Gwynedd and then the Vikings who raided into Archenfield. English aspects were introduced into the laws of Hywel Dda before final concord in the 920s-930s (Walters, 1993:128-131), with Tidenham granted to Bath Abbey shortly afterwards (Grundy, 1935: 237-253). Control of the Dean by Wessex would explain the phrase in the Ordnance of the Dunsaete that 'formerly the Wentsaete (Gwent) belonged to the Dunsaete' but now 'belong to the west Saxons and have to send tribute and hostage there'. As in the case of Archenfield Welsh customs were retained west of the Wye and the Ordnance would seem to be negotiating laws which could accommodate potential boundary problems between the two different cultures. If pre-Conquest Dean

did comprise the Dunsaete its name could have subsequently been lost by the imposition of royal forest over most of the area.

Choice of the name, Dunsaete, is likely to have had a similar topographical basis to other 'saete' names, the Wrekin (hill) for the Wreocensaete. 'Dun' may simply refer to the hills (dun) or red soils of the local landscape (Copley, 1986:120,125). The author suggests, however, that Ruardean may have provided a specific landmark on which to base the name. Its name has Welsh elements of 'rhiw' (a hill or slope) and 'din' or 'dyn' (fortified place) (Walters, 1993: 50); the latter could easily be accommodated as 'Dun' in the tribal name. At c.307m it is distinctive as being the highest point in the Dean, and there are earthworks and ramparts on its lower slopes beneath the medieval manor house (Scott Garrett, 1933). This overlooks a valley leading to the Wye which has formed the border with Herefordshire since Domesday. The valley also led to Walford and an important crossing-point into Wales. Ruardean was, therefore, a significant location, particularly since survival of the Welsh name suggests that it had been the Welsh who had formerly controlled the ford.

Welsh and Roman names also survive as modern settlements in the area around the former Ergyng centre (Ariconium); Penyard, Eccleswall, Nowent (Newent). Retention of the Roman component 'venta' (market town) can be seen in the Domesday name of Nowent (Morris, 1982) and may suggest a possible focus for the seat of the post-Roman Ergyng kings. There may have been some contemporary occupation related to the field name 'caerwents' southwest of the modern town of Newent. It is only a few miles from 'Ariconium', which has no indication of continued occupation past the fourth century (ch. 6). Some indication of a residual population may be seen in the (undated) burials found within the Roman buildings during eighteenth century excavations (Duncombe, 1996:215). Burials in sites which had significance to earlier societies can be used as a symbol to legitimize a new ruling elite. Round barrows appear to be the preferred choice for such secondary burials, but this would be influenced by the nature of existing monuments In the fifth and sixth centuries 47% of known burials used Roman sites, increasing to 76% in the seventh and eight centuries (Williams,H. 1997:1-33). In an area of predominantly Anglo-

Saxon place-names, the use of Nowenta (Newent) would suggest that the settlement pre-dated Saxon control

To the west of Newent a series of *tuns*, named after the cardinal points surrounded Linton and suggest its importance as a central place. Linton was established in close proximity to the Welsh 'Eccleswall' and suggests an attempt to emphasise, but not impose, the new regime; the post-Conquest manor was known as Linton and Eccleswall. Similar cultural transitions, from Welsh to Saxon, are noted in the contemporary epigraphy at Newent church (ch. 8). A 'king's' *tun* would provide support for a ruler. Location of such a settlement near Newent suggests that it was harnessing the highly productive agriculture of that area, and possibly a continuing interest in ore (ch.6). In 1999 the discovery, in nearby fields, of a hoard of rare gold coins, dated to the late Saxon period by the British Museum, demonstrates the wealth of contemporary inhabitants (Pritchard, 1999:3).

Tuns also appear in southern Dean, ranged along the Severn littoral up to Purton, but with a concentration in the peninsular area, including a further king's *tun*. They occur in proximity to Combresbury Hill; the use of 'Combre' (Welshman) in association with a 'bury' suggests a notable site belonging to earlier inhabitants of the area. Earthworks were noted in this location (Ormerod, 1861: 4, & GRO,D 726 111:38) but these have been lost to quarrying. The hill lies to the south of Boughspring Roman Villa.

Excavation at Boughspring villa found several burials within the buildings (Wilcox, pers. comm.) (fig.34). Two skulls found to the north of the main building and in its hypocaust had clearly been disturbed. The location of the latter suggests it may have originally been interred on the floor, the robbed stones of which pave medieval cottages in Tidenham. This position would have been similar to the third burial, laid on the mosaic floor and aligned along the wall. It consisted of a cist containing a forty year old female and had been carefully constructed from roof tiles, which suggests that the building was relatively intact at that time (Pls.12a, 12b).

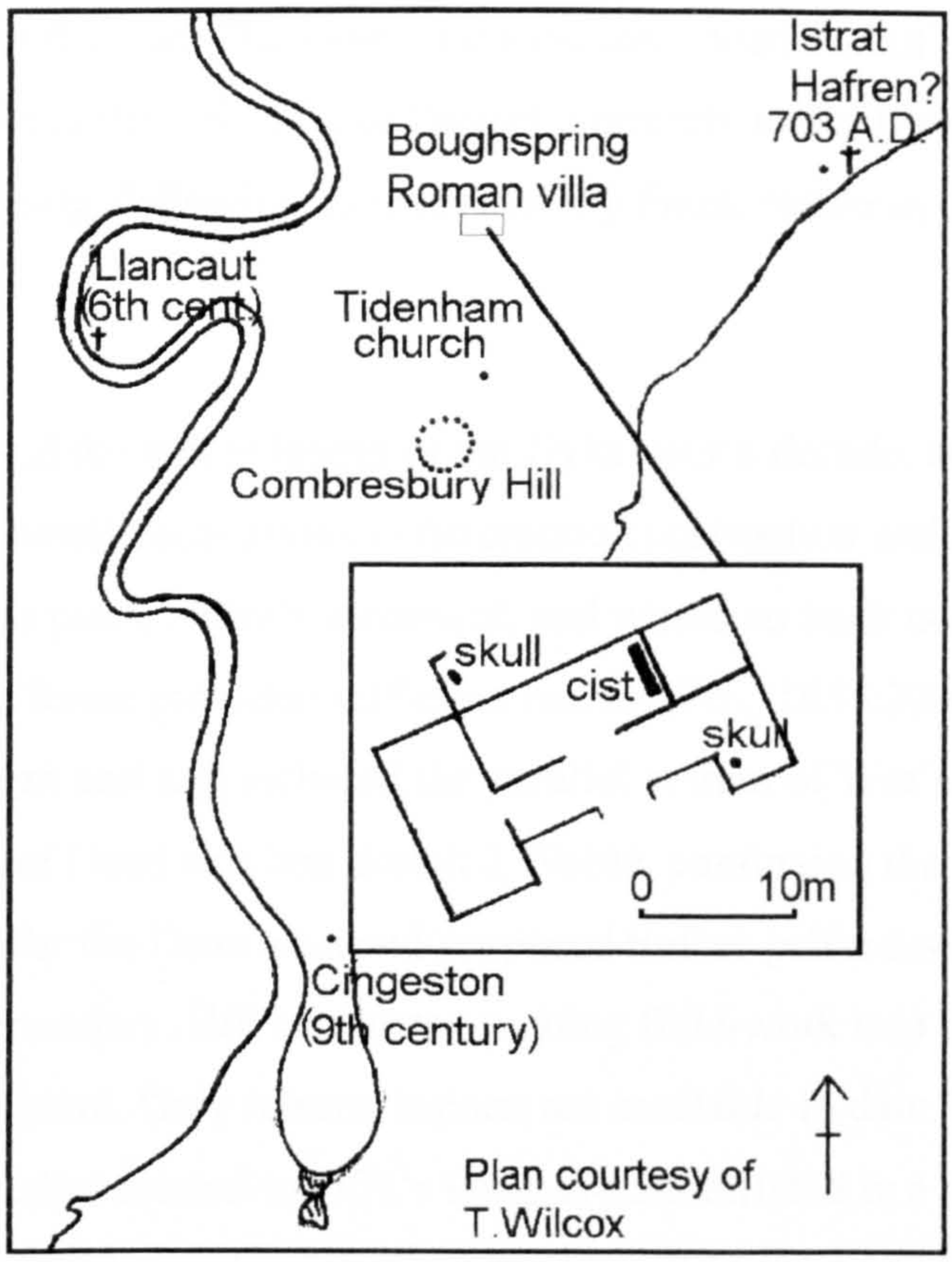


Fig. 34. Post Roman burial at Boughspring

Like Ariconium the burials suggests legitimization of post-Roman authority in the area. Several round barrows on Tidenham Chase could have provided potential secondary burial sites, though none has been found to date. It might suggest a deliberate choice of Roman sites in the Dean area. The settlement pattern around Boughspring remained small-scale and scattered contrasting with the development of Striguil (Chepstow) at the nodal point on the Welsh side of the river. The author proposes (below) that the Tidenham area provided services to Chepstow which survived into the medieval period and were not affected by the construction of the major landscape feature of Offa's Dyke.

Offa's Dyke

Offa's Dyke is the name widely given to a linear earthwork which runs along much of the border between England and Wales. A ninth century document by Asser (Fox, 1955: 289) stated that it was built by King Offa who separated the English from the Welsh by a bank and ditch which ran from the River Severn to the Dee. By inference that would mean that Mercian control had extended down into the Dean by the time of Offa's reign - the eighth century. The Dyke has been the subject of many

research projects in the past. The most extensive have been that of Sir Cyril Fox in the 1930s (Fox, 1955) and the Offa's Dyke Project, currently under David Hill of Manchester University, following its institution by Frank Noble in the 1960s (Noble, 1983).

Fox traversed the whole length of the Dyke over a decade, surveying and undertaking a few small excavations to determine construction and profile. His research aim was to prove Asser's statement, and where no bank could be found he asserted that dense forest provided sufficient barrier (Fox, 1955:204). As his work began at the northern end and included the parallel system of Wat's Dyke, his later work in the Forest of Dean was less detailed. Noble, continuing the same aim, repeated the work for the Dean area and proposed timber palisades for the gaps, and a patrolled, ridden boundary. Hill conducts on-going field-work into the structure and dating of the monument. Only interim reports are available to date (Hill, per.comm.). These and other studies related to Offa's Dyke are assimilated in a management survey undertaken by Gloucestershire County Council (Hoyle, 1996). Apart from documentary assessment, surface surveys were conducted for the purpose of initiating a conservation policy - the popularity of Offa's Dyke Long Distance Footpath has caused erosional problems to the earthwork.

Taken as a whole, the extant sections, covering some ten miles, form the largest single earthwork in the Dean. (fig.35a). The Dyke begins at the top of cliffs overlooking the Severn (ST 553 928), and crosses the Beachley peninsula towards the Wye. This route utilises the shortest width of land and avoids areas of floodplain. When it reaches the Wye it heads north-westwards as separate lengths of rounded earthen bank. There is a possible trace of the earthwork in a field boundary at Tutshill, but part of this (ST 535 949) may be related to later quarrying. No firm evidence for the Dyke can be seen as far as the ramparts of Lancaut hillfort, which may have been incorporated into the Dyke system. A second, unconnected, section then heads north along the top of the Wye cliffs. It is revetted by a dry-stone wall along its internal face in the 'Dennel Hill' to 'The Slade' area. Beyond this the earthen bank has some stone walling along its crest.

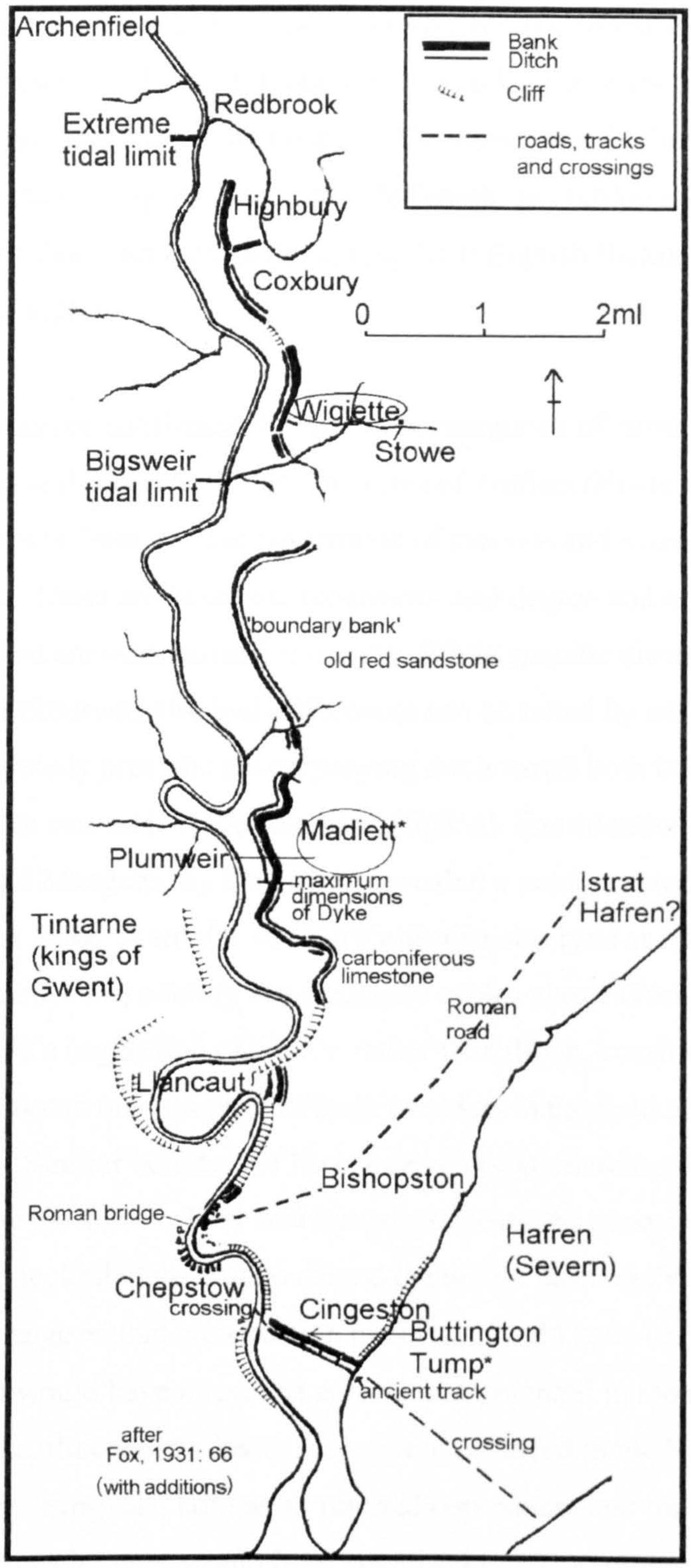


Fig. 35a Offa's Dyke in the study area up to Redbrook.

Dimensions of the bank increase further north, bordering Madgetts Farm, with its maximum height of four metres in the area opposite Tintern. The earthwork follows the edge of the Wye escarpment for most of its length, although taking a short-cut from one ravine to another at Madgetts. From Brockweir valley, where an

isolated section has been revetted for use in a mill dam, the course becomes lower and more meandering along St. Briavels Common. It is indistinct in the Bigsweir valley and along the escarpment from 'The Fence' to Coxbury Farm, before ending in a well-preserved section along the spur above Redbrook. No further identified sections can be seen before short, but well-defined, lengths at English Bicknor which extend into the Lydbrook Valley.

The 1996 survey confirmed the two main categories of construction, noted by Fox as 'true Offan'and 'boundary bank'. A series of profiles (Hoyle, 1996,vol.3) provided a refinement from general description of *massive* and *rounded* into qualitative groups. These are based on dimensions and degree and orientation of sloping surfaces and are summarised in fig.35b. While specific dimensions may not be apparent to the observer, physical differences can be noted by walking the length of the Dyke in the study area: the accompanying ditch varies both in dimensions and location, being both east and west of the bank (fig35a). Examination of a number of badger setts around Madgetts, by the author, revealed a random internal distribution of stone within the Dyke. A similar structure was also observed at a section through the Dyke, made earlier this century for electricity cables above Dennel Hill. Findings contrast with Hoyle's suggestion of a built, rather than dump, construction for the Dyke. The author noted random piles of large boulders in the field adjacent to the Dyke at Madgetts. Similar boulders of limestone or conglomerate piled at ST 567 983 were also noted by the author. They had lain just beneath the grass field surface and were cleared and stockpiled in 1998 to extend the arable farming (V.Reeks, pers. comm.). It would suggest that construction materials would have been easily available and their removal would have improved agricultural potential in the area. Similar profiles of the dyke, though on a lesser scale, were achieved in the Sedbury to Beachley sector by using turf, both as an internal component and for revetting (Hill, 1996). Use of such techniques would have stabilised the structure in an area which did not have an abundance of available stone, and allowed greater height and a more vertical face to be achieved on a less stable geology.

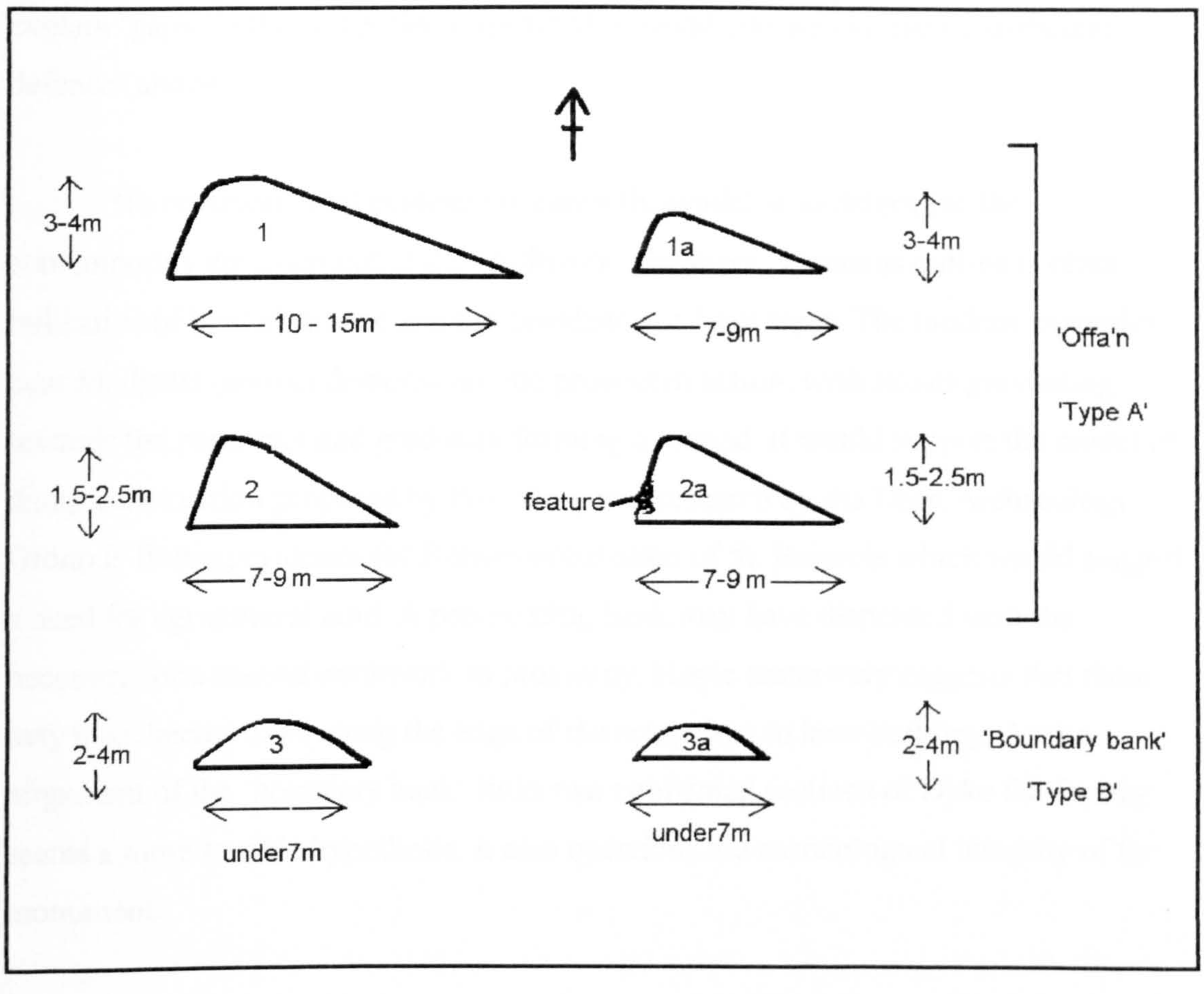


Fig. 35b. Variations in the bank profiles of Offa's Dyke.
after Hoyle & Vallender, 1996

Category 1: steep scarp on west, sloping on east.
1a: smaller dimensions, same outline.
Category 2: smaller base range, no slope across top of bank.
2a: outer face truncated by other, later features.
Category 3: smallest dimensions.

The only area in which the 'boundary bank' is consistently found is from Brockweir to Bigsweir within the limestone geology. This sector differs in alignment, following a sinuous course well inland of the scarp. Lack of alignment had been interpreted as being dictated by the presence of dense forest which restricted sight lines for the constructors, supported by Fox's own difficulties in surveying around Redbrook (Fox, 1955:222). However, several decades later the matured woodland is easily traversed and with good visibility. It could suggest that the earthwork had been constructed during a period of woodland regeneration. The existence of impenetrable woodland would, however, contradict another argument put forward by Fox to

explain 'gaps' in the Dyke; that impenetrable woodland was in itself a sufficient defence (above).

No environmental evidence is currently available to determine the contemporary environment of the earthwork. However, a sinuous outline is often indicative of land clearance and the avoidance of large trees. The modern examples near Madgetts (above) demonstrate the process in action, with stones gravitating towards the perimeter and gradually forming a mound. It would support the model of dump construction proposed by Fox. On-going research by the Dean Archaeology Group is finding evidence for Roman occupation of St. Briavels which would suggest a need for agricultural land. A pre-existing bank may have dispensed with the necessity for a second earthwork in proximity. Hoyle tentatively suggests that there may have been a dyke along the edge of the scarp, lost to later building. As the alignment of the 'boundary bank' links two confirmed sections of Dyke the former seems a more tenable hypothesis. It also questions the chronological integrity of the monument.

There has been no positive dating of any part of the earthwork in the Dean so far. Both optical and radio-carbon dating have already been attempted by the Offa's Dyke Project, particularly on the Beachley section (Hill,1996 n.p. and pers. comm). No conclusive results were obtained. Comparison with linear earthworks in other parts of the country demonstrates that the typology is not limited to the Anglo-Saxon period. Data from earthworks associated with the northern Dykes (including the Short Dykes and Wat's Dyke) have identified a range of dates, varying from prehistoric to Norman (Hill, 1996:n.p.). Bokerly Dyke, North Dorset and Wansdyke also demonstrate a range, but a pattern is beginning to emerge which suggests dykes of this type correspond to territorial boundaries between tribal groups (Corney,M. pers com). Construction of such a monument may therefore have been both symbolic and defensive.

A defensive role would seem unlikely in Dean; for the majority of the Dyke's length the Dean had natural defences of the Wye and cliffs reaching up to 68m. A further 3-4m on the top would not make any significant contribution. By obscuring the view it could also have helped potential invaders by offering the opportunity to

assemble and rest before making any final assault. Given the low Dean population, recorded at Domesday, it is highly unlikely that there would have been adequate manpower to patrol the Dyke and a river route circumventing the end of the Dyke could have offered a far easier option for potential invasion. A ferry crossed into Beachley from Hardwick (modern Bulwark) with the route apparently unrelated to the road layout of the medieval town of Chepstow and therefore predating it. Within Beachley an ancient trackway identified by Ormerod (GRO D 726/3) provided a route following the Dyke and gave access to the river crossing from Slime Pill to Aust.

Although they have now been destroyed by roadworks, earthworks at Buttington Tump, in Beachley. suggested a strengthened section of Dyke around an entrance (Lewis, 1963:202-4). Such an entrance would be consistent with patterns noted in other dykes both here and on the Continent, such as Danvirke (Hill, 1996:n.p.). Place-names including 'gate' are distributed along the line of Offa's Dyke at Stantonesgate (Staunton), Symond's Yat, Wyegate and Madgetts. All occur where easy access could be made to and across the Wye with associated holloways. With the exception of Staunton where identification of any Dyke remains tentative (Standing, 1997:np) all have some related earthworks.

At Symonds Yat the Huntsham river crossing is backed by the cliffs of Yat Rock and access would have been via the Iron Age hillfort whose ramparts are proposed as forming part of the Dyke. Symond's Yat is the southern termination of an isolated section of Dyke which ends at the Lydbrook Valley (below the Roman sites of Hangerbury Hill). This section lies opposite the proposed site of the Welsh bishopric and therefore could have symbolised the separation between it and the English church. Retention of Welsh customs in Archenfield suggest that it was a client kingdom and there would, therefore, have been no political requirement for a Dyke along the remainder of its English border.

Redbrook lies at the head of a major valley opposite the southern boundary of Archenfield. A land route also leads to Wyegate which lies to the north of Stowe. Stowe is at the head of a dry valley leading to the Wye with convergent trackways and remains of a ringwork (below). Banks span the valley joining to the ringwork but are

truncated by the modern road. These banks overlap in the central valley giving the impression of an entrance (fig.36 and Pl.13).

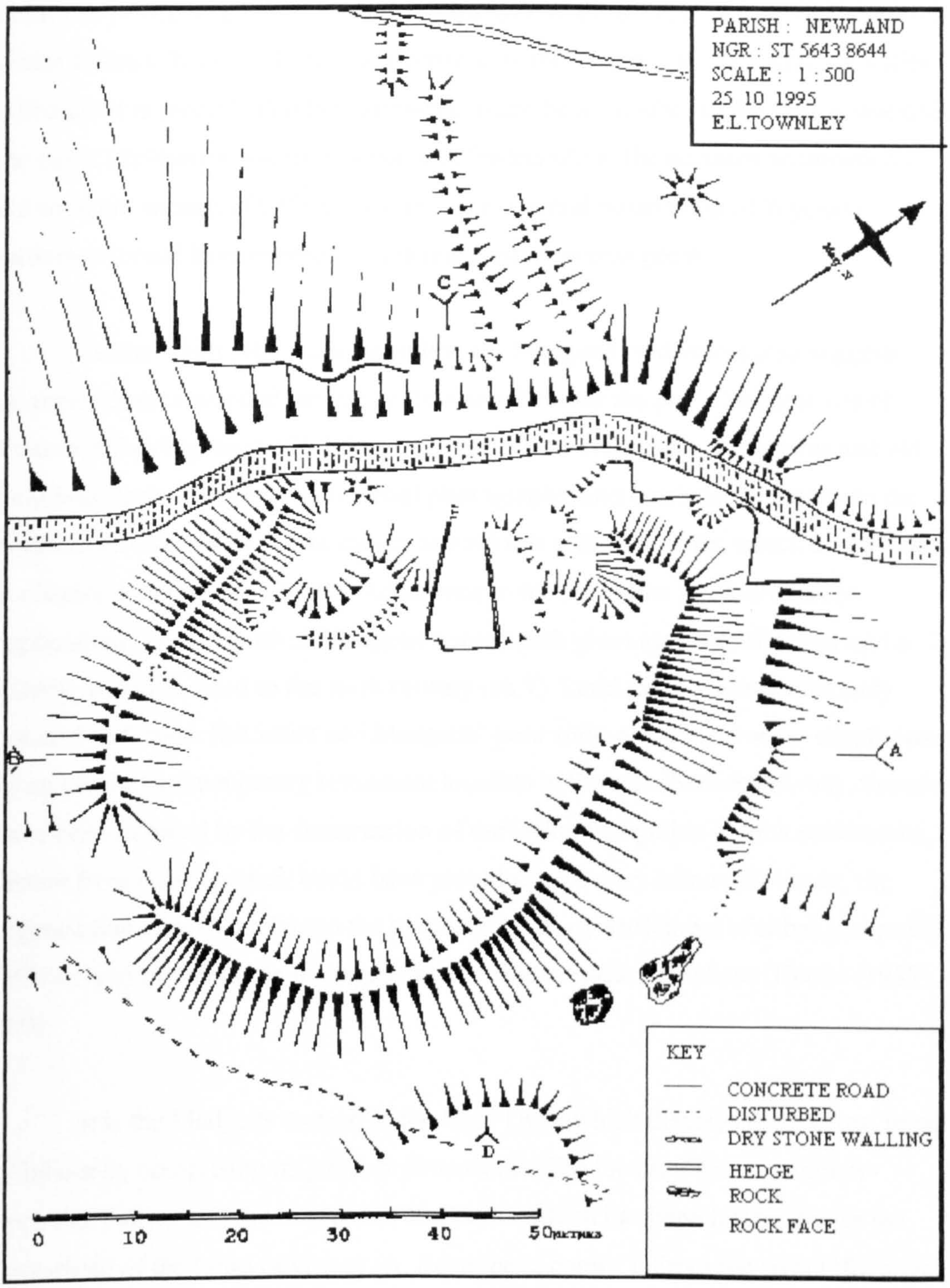


Fig. 36 The earthwork at Stowe.

The valley at Stowe led to the major river crossing of Bigsweir, the normal tidal limit for the Wye. A track (Coxbury Lane) leads across the Wyegate plateau, where a rounded outline of its fields around an active spring suggests the location of

the Domesday manor. The Dyke bounds the southern scarp and then rises to Coxbury where it is crossed by Coxbury lane leading down to the Wye at Redbrook. At this point it is joined by a massive bank, comparable to the dimensions of the Dyke itself, which effectively cuts off the spur overlooking the entrance to the Redbrook valley. Although it is possible that the earthwork might be a woodbank (the spur is wooded) the name Highbury suggests a possible defended site at the northern termination of the southern section of Offa's Dyke in Dean. Central positioning of Wyegate settlement could have enabled it to manage either access point.

Further south, the rounded outline of 'Madgetts' settlement also suggests clearance from a wooded landscape (this area became the post-Conquest site of Tintern Abbey's grange of Modesgate). Rectilinear cropmarks, enclosures and old field boundaries can be seen on aerial photographs, and lynchets are extant on the northern hillslopes. The Dyke curves around this area of activity, which could indicate avoidance of a pre-existing site. Adherence to the scarp line is a more likely explanation. To the south of Madgetts a steep path gives access to the river and a fishery, which is dated to the sixth century (ch.7). Land parcels were commonly donated to furnish fish weirs and Madgetts' poor soils, aspect and water supply would be atypical of contemporary settlement location in the area. Settlement may, therefore, have been initiated by the construction of the Dyke. Instigation of new settlements, distant from existing ones, could have provided necessary labour. However, the organisation may also relate to the proposed arbitrary settlement of tribal groups along Offa's Dyke in relation to management after the construction phase (Hooke (1989: 200).

It is the Madgetts section of the local Dyke which displays the greatest imput of labour by comprising its greatest dimensions. The location was significant - opposite Tintern and the impressive earthwork which has been interpreted as the stronghold of the kings of Gwent (A. Eden, pers. comm.). From the river Offa's Dyke would be difficult to see but could have impressed with its maximum proportions from the hilltop opposite. Visibility from this standpoint extends to Brockweir, the point at which the dyke diminishes into boundary type construction. The function of Madgetts may therefore have been to symbolise power and prestige, and an active population which had the capability to monitor activity on the Wye below.

Concern over traffic and access along the river were defined in the later Ordnance (above) which represents concern over border raids or losses. Raiding was a form of warfare suggested by the laws of Hywel Dda, in order to obtain spoil, particularly cattle (Alcock, 1987: 305). Brooks cites an account in which 1500 cattle and five herds of swine were taken at Caer Lwytgoed 'with no regard to the resident church' (1989:169) and Alcock suggests that cattle raiding was almost endemic (Alcock, 1987: 305). One might therefore see an alternative role for a dyke. It would create a barrier to prevent stampeding or illegal movement of animals, but like Hadrian's Wall before it, allow legitimate trade to take place through controlled access.

The Tidenham Charters

Tidenham offers the only documented information regarding internal pre-Conquest boundaries and settlement in Dean. The location features of tenth century boundaries are mainly non-specific and the interpretation is subjective. Grundy translates: 'from the mouth of the Wye to the headland where the yew tree grows, from there to the row of stones, to white hollow, to yew valley, to broadmoor (or swampy ground), to double ford and to the pill of the east island (or edge) to the Severn.' His identification is widely quoted and closely follows the modern parish boundary. It conforms to a theory that post-Conquest English parishes were often based on estates which had been laid out in the Anglo-Saxon period. Legal proceedings in 1282 suggests that part of the present parish boundary was created by Tintern Abbey who assarted land into Tidenham at Ashwell, from its neighbouring grange of Woolaston (Williams, 1984:272). Ashwell's boundary forms part of Grundy's Saxon boundary, around the northern tithing of Stroat.

Stroat was recorded as disproportionately larger than the other tithings, at twelve hides compared to three or five in the others, but this difference would be magnified by Grundy's boundaries which stretched up to Brockweir on the Wye. Grundy also ignores the location of Stroat's fisheries; its thirty fish weirs were all on the Severn. The proposed boundary would presume no fisheries along almost six kilometres of the Wye and ignores the existence of Madgetts.

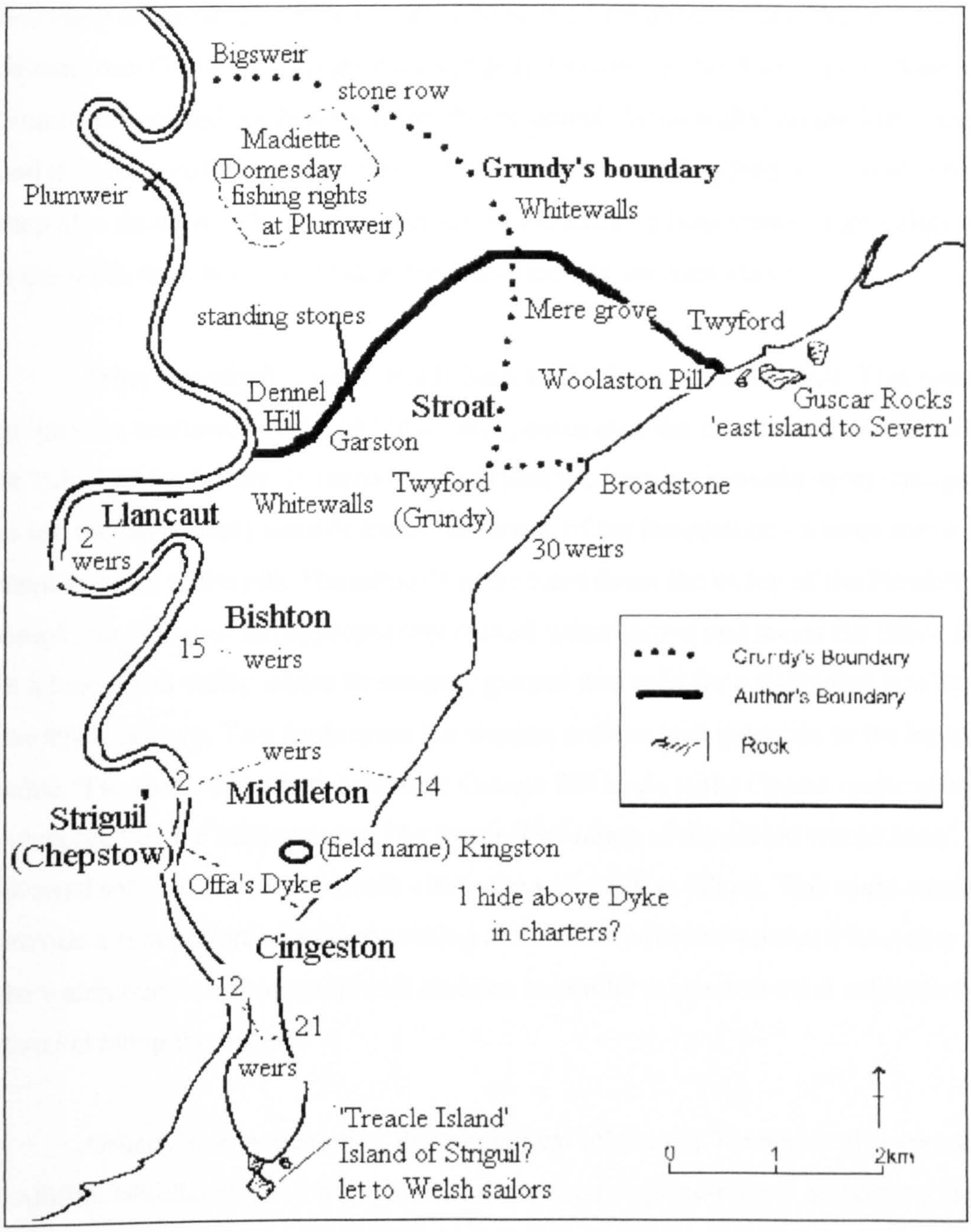


Fig. 37 New interpretation of the organisation and bounds of 10th century Tidenham.

The author therefore suggests an alternative interpretation of the bounds (fig.37) beginning from the easily identified mouth of the Wye. Grundy proceeds to the valley at Brockweir as the first potential agricultural land for a 'yew headland'. The author suggests the first geological break in the Wye cliffs, the slade at Dennel Hill (ST 549 974), where yew trees grow today, would be more appropriate. Hut circles and stone alignments lie at the top, with extant 'hoar stones' above Garston. Some, bordering the track 'Rosemary Lane', would seem to mark the southern

boundary of Stroat tithing - any one could be the 'stone row' of the charters, and distant from Grundy's wayside stones at Madgetts above Brockweir. From Madgetts Grundy progressed northeast towards fields named 'Whitewalls' on the Tithe map, and then diagonally southeast towards Stroat where his 'Twyford' is located. The tithe map also shows a 'Whitewalls' adjacent to the author's hoar stones, above Garston. A route north from here would skirt the woodlands of the later chase.

From 'Twyford' Grundy heads back to the Severn at Horse Pill. This route divides the scattered hamlet of Stroat and glosses over the mention of an 'east island' or 'edge' of the Severn. If Horse Pill had been the location it would seem strange not to use the particularly notable extant landmark of the Broadstone - a three metre high menhir, close to the pill. The author's route turns down the valley of the Picadilly Brook, running past the appropriately named 'mere' grove and meets the Black Brook in a broadened valley where its swampy ground was used for a withy bed into the twentieth century. Two fords cross the streams and the area gave rise to the hundred name 'Twyford'. From here a track to Grange Pill leads to the Guscar rocks which are submerged by the highest tides. The lower tidal range of the period would have allowed some of them to protrude above the waters as an island. This route would provide a reduced area for Stroat tithing and a more cohesive northern boundary using the watercourse as a topographical division in similar manner to other settlement division along the Severn.

Grundy's organization of the component tithings of Tidenham also appears doubtful. Middleton and Cingeston no longer exist as place-names, although a field name 'Kingston' survives just north of Offa's Dyke and east of Sedbury. Grundy interprets Middleton as modern Beachley with Cingeston sited at Sedbury, presumably because of the field name. Noble places Middleton at Tidenham itself with Cingeston at some imprecise point above Sedbury cliff (Noble, 1983: map3), leaving Beachley with no apparent settlement. Peninsular Beachley with its dual shoreline would be more able to accommodate the 33 fishing weirs, on both rivers, ascribed to Cingeston in the Charters. Pre-Conquest Cingeston had 'land above the Dyke', topographically consistent with the location of the field name on rising land to the north of Offa's Dyke; at one hide it might seem the original settlement site. Cingeston also rented land, described as 'outside the hamme', for purposes related to

Welsh shipping. A possible site could have been the modern tidal island at Beachley point, St. Twrogs. Like Guscar the lower medieval tidal range may have produced only partial separation beyond an area of marsh.

The island was formerly called 'The Treacle' (Speed, Map of Gloucestershire, 1610) which is phonetically similar to Estriagol or Striguil (Chepstow) and suggests a Welsh connection. The Domesday reference to Chepstow notes that the town controlled boats 'going to the wood' and establishes a maritime link. With its own quays and slipways, use of land on the English side of the Wye would seem superfluous for landing, or boarding. The entrance to the Wye is narrow, with a bank of rocks beneath the water, and the island would have been a focal point for navigation into the channel. Application of a Welsh saint's name for the hermitage on the island would suggest that there was continuity with Welsh interests. Access would have been possible across the Wye, by the Hardwick ferry, and then the overland track (above).

River use may also identify Middleton, which had fourteen fish weirs on the Severn and only two on the Wye - modern Sedbury is flanked on either shore by high cliffs and has only restricted access to the rivers. Middleton also suggests a less marginal position than the Beachley peninsula, and possibly a later foundation, placed between existing settlements. One possibility for a new settlement may be change induced by Offa's Dyke: Cingestun appears to have been bisected by the earthwork and there may have been contemporary settlement drift. By the fourteenth century the peninsula was known as Beachley, with a large estate and a virtual monopoly of the fishing by the de Bettesle family (Madge, 1903:68). The fourteenth century estate and the lucrative Aust ferry were run by the Welsh ApAdams family. Their moated homestead, corrupted to Badham's Court (ST 549 938) is located near Kingston field, and suggests that this had been the site of Cingeston, to which the ferry rights attached.

Middleton may also have been affected by political changes. There is no further reference to this settlement after the Tidenham Charters, and a change to 'Sudbury' (Sedbury) suggests that there may have been an upgrading of the settlement from the agricultural emphasis of the 'ton' place-name. A possible date for such a

change may be as part of the series of tenth century burhs set up by Wessex, as proposed by the author for Westbury, which seemingly replaced Chaxhill as the dominant settlement on the Rodley peninsula. Lydney, adjacent to the stricture in the channel of the Severn which marks the transition in the river from middle to inner estuary, had already been controlled by Wessex from the ninth century (Walters, 1993:128). A 'bury' in the south of Dean would create a string of important manors held by Wessex, evenly spaced at c.10mile intervals along the Severn shore between Gloucester and Chepstow, and in locations which could monitor traffic along and across the Severn. Sudbury occupied a site which was strategically important because it overlooked not only 'Pighole Passage' across the Severn, but also the river traffic up the Wye and the bridging-point into Wales.

The Domesday Landscape

Under Wessex Dean still remained part of the shire of Hereford. At Domesday the area of Dean was included as part of an extended Gloucestershire, changing the obligations implicit in shire organisation (Faith, 1997:101) to Gloucester and associating it with southeast Gwent. The former Welsh territory included the castle at Chepstow, built by the Earl of Hereford (Morris, 1982:S1). A further royal castle at Monmouth (Morris, 1982: E35.48) was built in the south of Archenfield, an area which retained its Welsh customs and was largely unrecorded in Domesday.

The two castles represent the most southerly of a string of castles which eventually stretched up through the Welsh Marches (border lands), with Herefordshire containing the largest concentration in England. Castle building, at Ewyas Harold and Richard's Castle, is thought to have begun before the Conquest by Norman settlers under Edward the Confessor (Morris, 1983: n.3). Help had been requested by the king after sacking of a wide area of land, including Tidenham in 1049 and Hereford itself by 1055 (Walters, 1993:135). Several vills in Herefordshire are recorded as waste at Domesday, a description also given to Newarne, Redbrook, Staunton and Whippington (Morris, 1982: E2, 3, 4, & 6) - all Dean vills along the border. Although the most northerly, Whippington, belonged to the Bishop of Hereford the others were all 'land of the king'.

This description was also applied to the majority of contemporary landholding across the Dean, with the exception of church land in the north-east corner and around Newent (Morris, 1982: 10.8,11 & 16.1). Several barons held lands grouped around the periphery in the border lands between English and Welsh, known as the Welsh Marches. Marcher Lordship gave favoured barons virtual autonomy over their territory. In the northern part of Dean, Bicknor and Mitcheldean were owned by William son of Norman, who appears to have had a role in supervising the Forest until the Anarchy: Micheldean was tax exempt and before 1066 had been held by three thegns (Morris, 1982: 37.2, 37.3), Longhope had also belonged to two thegns who could 'go where they would'. Thegnage represented a wide class of Anglo-Saxon landowning based on charters and described in the *Rectitudines Singularum Personarum* (Liebermann in Robertson, 1939: 451) - military service represented the highest status. Domesday distribution indicates a thin scattering along the Welsh borders, an area where 'radmen' (ridingmen) who had similar 'military'services are concentrated (Faith, 1997:124). Provision of horses by tenth century 'geneats' as part of their services suggests similar roles in Tidenham (Robertson, 1939:206). Mitcheldean's initial forest guardianship evolved into a more local management as a sergeanty (Faith, 1997:95) after the twelfth century construction of St. Briavel's castle (Remfrey, 1986: 2).

Longhope and neighbouring Huntley were included, with Lidenei Parva (St. Briavels) and Hewelsfield, in the territory of William, son of Baderon, based at Monmouth castle, who also appears to have controlled Archenfield (Morris, 1982. 32.6, 32.7, 32.11, 32.12 E35). William also held a small group of neighbouring manors at Stears, Newnham and Hyde (Morris, 1982, 32.8, 32.9, 32.10). These provided a nucleus from which the borough of Newnham developed in the twelfth century (Leech, 1891:64). Newnham maintained a close administrative association with St. Briavels and was the limit for local juridiction; it had a gaol and received forest fees. It was at Newnham that responsibility for royal consignments taken from the forest reverted to control by the Constable of Gloucester. Domesday manors in southern Dean, at Aluredston, Wyegate, Woolaston and part of Tidenham were included in the territory of de Eu (Morris, 1982, 31.2, 31.4,31.5, 31.6), creating a fourth division of rule over the Dean. De Eu's territory stretched into Wales and later became known as the lordship of Striguil, based on Chepstow castle.

Defensive Structures

The castle of St. Briavels was not part of the chain of strongholds which upheld the Norman regime after 1066. Its origins are obscure, but its architecture attests to a twelfth century nucleus (Remfrey 1986: 2). During this century many illegal castles were built across Britain to support factions in the Anarchy and were subsequently destroyed. The Dean had been used as currency, by Queen Matilda, to buy the support of the sheriff of Gloucester (later the Earl of Hereford), but was reclaimed on his death in 1147. Construction of a new castle, or enhancement of an existing structure, may have been undertaken to symbolize and re-establish Crown ownership. The castle was situated on the highest point in southern Dean and near a major Wye river-crossing and the strategically important iron reserves (fig.29).

Crown control might suggest that earlier defensive sites would have been disabled or removed. There has, to date, been no comparative research to identify and form a chronology for extant earthworks in Dean which may relate to this period, or earlier, and the author has attempted to group them from their characteristics (fig.38). It has been proposed that St. Briavels is a relocation from the ringwork at Stowe (SMR 24) (fig.36). Dating of the latter appears to rest on a couple of medieval artefacts, both portable, found in an insecure context high in the ditch infill (Scott-Garrett, 1933,n.p). A similar small ringwork is located at Soudley. Although it may be coincidental, two of the three Saxon weapons found in Dean were near these sites - the third was found at Tutshill in association with Offa's Dyke (Fox, 1955: 204). A battle- axe was found near Stowe, an area in which a silver penny of Beorhtric, late eighth century king of Wessex, was also found (Hart, 1967:49); Soudley produced a spear (Walters, 1993:130).

The author has noted Stowe's relationship to both Offa's Dyke (above) and the Bigsweir crossing point on the Wye, and suggests an Anglo-Saxon origin for the earthwork. Its earthen banks reach c. 3.5m high surrounding an internal area which has a diameter of c.60m. There was an apparent elevation in the bank on its northern side. A ringwork of similar dimensions, and also with no dating evidence, is located at Howle, north of Ruardean; this site overlooks the Walford crossing point on the Wye. A small ringwork at Newnham stands near a crossing point of the Severn, with three adjacent Domesday manors. Although there have been suggestions that it was a

Name of earthwork	Ringwork	Motte	Stonework	In Forest at Domesday	Associated church	Medieval Manor	Bailiwick Name	Later castle
Stowe	*			*				
Howle Hill	*			*				
Redbrook	*			*				
Newnham	*			*				
Castle Tump	*							
Hewelsfield		*		*	*	*		
Lydney		*	*					
Bledisloe		*				*		
Bullo		*						
Aylesford		*		*				
Poulton	*?				*	*		
Littledean	*			*		*	*	
Staunton (Castle field)				*	*	*	*	
Bicknor		*	*		*	*	*	*
Ruardean		*	*		*	*	*	
Penyard		*	*					
Taynton		*		*				
Taynton Parva		*		*	*	*		
St. Briavels	*?	*	*	*	*	*		*

Fig.38. Comparative Data of Defensive Earthworks in The Forest Of Dean

post-Conquest construction it does not appear to relate to the layout of the later, medieval town. There do not appear to be any further ringworks on the Severn littoral. The distinctive moated site at Poulton manor may represent continuity from an earlier earthwork, as proposed for St. Briavels - it would have had a commanding view over a major pill, Brims Pill.

A ringwork which does not relate to either river was found on Glasshouse Hill near Huntley (SO 715 212). Previous survey suggests that its small circular vallum with raised 'platform' resembles the Stowe earthwork (Scott-Garrett, 1933n/p) but it is now obscured by tangled undergrowth. More recent survey at nearby Taynton suggests that its earthworks developed from an earlier ringwork, consistent with early timber castles of 1066-1215 (SMR 1020) - there was a manor at Domesday. The eroded Taynton site denotes a weak motte with a western bailey, described as a moated manor (Williams, 1996). Taynton Parva has an irregular motte with multiple baileys on a wet site within which fishponds and a large swannery were later constructed (SO 747 228). The associated church, whose origins are unsure, was acquired by Gloucester Abbey in 1134 (Burrows, 1987).

Mottes can be found elsewhere in Dean. Unlike the location of the ringworks, which occur on spurs or low mounds, motte distribution appears to favour high, prominent positions. The most southerly stands at Hewelsfield (SO 569 021) near the church and on a crossroads of the route from Chepstow to St. Briavels and from Woolaston to Brockweir (Hart, 1967:56). Woolaston itself had a small ringwork at Edge Farm (ST 582 995) but this is interpreted as Iron Age by Walters, (1993:49). Medieval ridge and furrow respects this monument which lies near the site of the medieval village.

Further upriver the mound at Bledisloe has been considered as a motte (above). Although its material culture suggested sporadic, varied use up to the post-medieval period, occupation pre-dates the mound. Limited twelfth century pottery, fire and bone debris was associated with post-holes of a possible c. 16ft square building. Debris of the same century was found above, suggesting a short duration of the timber structure before replacement. Although it may have been a watch tower, replaced by an unfinished motte, it is of low height, being only 7ft. With a 60ft

diameter its dimensions are similar to an earthwork, found by the author at Hulins Farm to the north (fig.39).

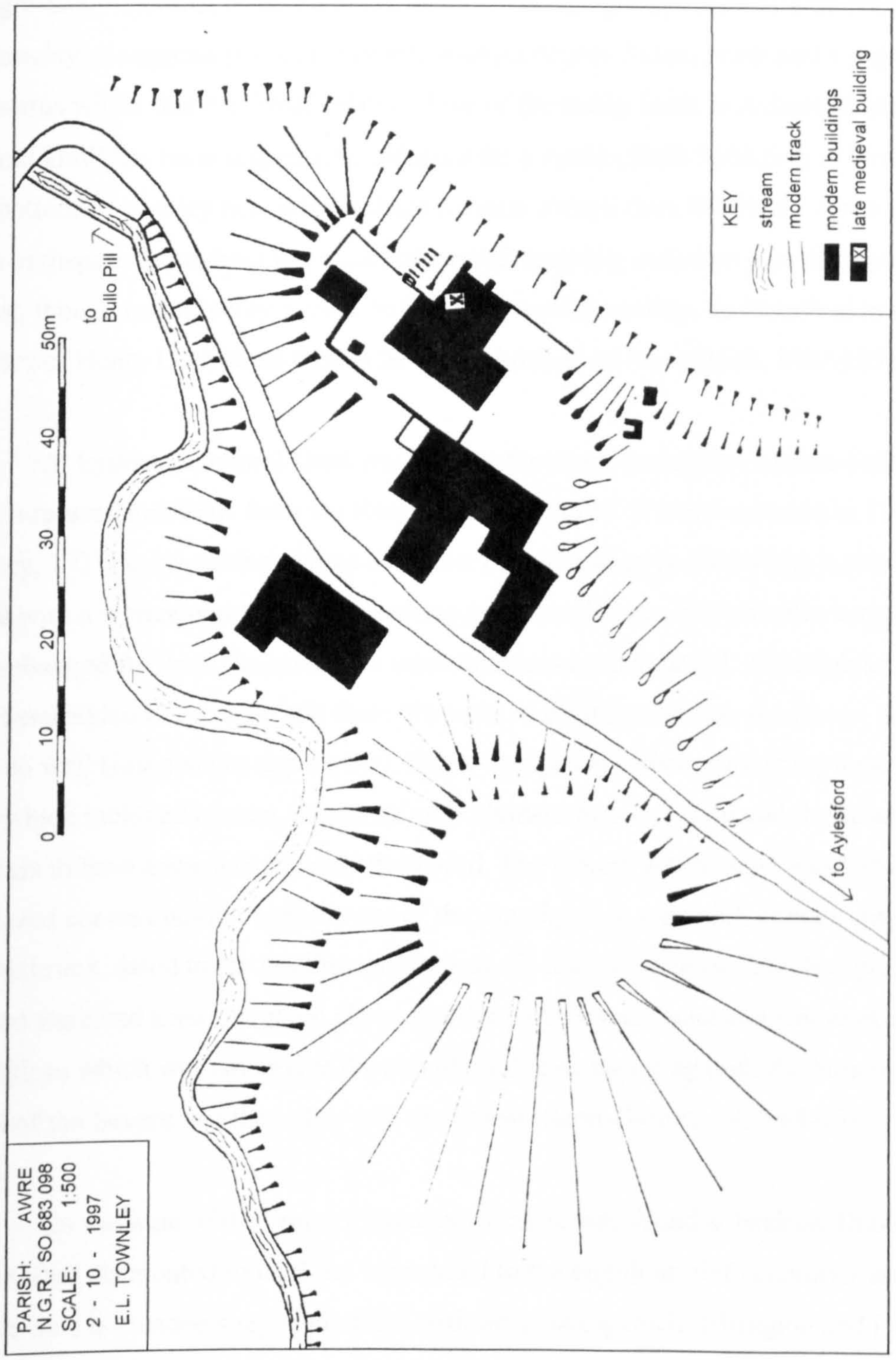


Fig. 39 Proposed motte and bailey castle site at Hulins Farm, Bullo.

Survey here suggested a second, lower, artificially raised area which could have been a bailey on the southern, river side. Extant buildings, containing elements of a fifteenth century construction (SMR 1010), lie within the 'bailey'. The site overlooks

Bullo Pill with two tracks from the Forest converging on either side. A probable haie (Anglo-Saxon hunting term, ch.5) lay to the north. As an individual ½ hide holding at Domesday, it suggests partial continuity with an Anglo- Saxon estate and a degree of the status which this conferred (above). One of the tracks leads to Aylesford where a natural knoll has been suggested as adapted for a motte (SMR 18442). It is located in the bottom of a valley near a ford where it meets a track from Bledisloe. Awre was an area of dispute throughout the medieval period, resisting inclusion into the royal forest, though undoubtedly outside in the early twelfth century, as described in a charter of Henry I. All three mottes lie on the borders of Awre (Hart, 1987:185).

At Lydney, a natural knoll was used as the motte to support a stone-built castle which re-used materials from the Roman temple nearby. It was excavated in 1931 (Casey, 1931) to reveal the almost complete plan of a keep (c.10m x7m), a small inner ward with a rectangular tower overlooking gate foundations, and an outer ward with an embanked foreland. Its sandstone construction was rock-based. Although an oven had been added to the keep and there are signs of a garderobe near the tower, there was no well (just a slight depression). Slight occupation debris, indicating a varied diet which included oysters, suggested only short-term occupation and the structure appears to have been subsequently destroyed. The pottery assemblage was 95% unglazed coarse cooking ware. It was of the sagging-base type with convex sides and everted rims, dated to the twelfth century and of local distribution. The few pieces of glazed ware had a yellow/green glaze. Similar pottery was found at a ringwork at Littledean which was situated at the end of a ridge overlooking both the horseshoe bend of the Severn and the valley into the Forest (Scott-Garrett, 1958:48-60).

On the west of the Forest a stone-built castle was found at Bicknor (Saxon Bicanofre). Its moated mound has been dated to the eighth or ninth centuries and it stands on a horseshoe-shaped platform with interlinking ditch (Elrington and Herbert, 1972:9-10). Although there is no evidence to indicate the original purpose of this mound, its location, near the isolated section of Offa's Dyke, suggests that it may have originated as a ringwork, in common with other ringworks noted by the author in proximity to the Dyke, and therefore related to its defence. Bicknor's initial structure was subsequently extended by a second, larger platform to the east and north, its ditch linking into the earlier system. A well on the western side of the complex appears to

be protected by a further deep ditch and the parish church stands on the outer platform. Excavations into the motte found a small stone keep c.12ft square with a barbican on its northern side. The paucity of remains suggest that the castle had a short period of use, although there is a reference in 1223; William of Avenal made a fine with King Henry III to have the lands of his father, Ralph Avenal which he held *in capite* with 'the bailiwick and castle of Bicnoure' (*Rot.Fin.* 8 Hen. III).

The same family held Ruardean manor, for which a fourteenth century licence to crenellate was given (*Cal. Pat. Rolls*, 1311: 355). The extant remains lie to the west of the parish church, with indications of earlier ramparts lower down the hillside. Excavations by Scott-Garrett revealed remains of structures below the partially demolished manor. Slight traces indicated part of a round tower with one or perhaps two outer wards - possibly never finished (GRO D 3921 11/41). In the early seventeenth century a substantial rectilinear structure stood within a distinct area, named 'Castle Mead' (PRO MR 397). Village layout related to the road 'Smiths Way' rather than either castle or church.

Both Ruardean and Bicknor are situated near iron deposits; nearby Howle manor provided a lone record of a smith in Domesday Dean (Morris, 1983: 1.60). The ability of these manors, and that of Lydney (also adjacent to iron deposits), to provide stone, rather than timber castles may have been dependent on the success of the contemporary local economy. A further stone structure, again associated with an iron-producing area, was Penyard Castle. Ruins of a massive stone wall above an undercroft suggest the presence of a defensive structure, overlooking a northern route into the Forest (Pl. 14). Stone tooling dates part of the complex to the twelfth century but there are several episodes of remodelling with later use as a hunting lodge (ch.5). A tower belonging to John Inge was referred to in an inquisition of 1334 (Taylor, 1993:20-24).

At St. Briavels the castle conformed to the pattern of prominent position and accompanying church. From an initial twelfth century keep it was progressively extended throughout the medieval period (Remfrey, 1986:3-20). The author suggests that the pre-Conquest settlement may have concentrated further south of the modern village, near the top of the holloway to Bigsweir, avoiding the former industrial area

which created a spoil heap at 'Cinder Hill'. The prominent area, now occupied by the castle would have been a vacant space in which to build, with a ready-made workforce at nearby Walton. All the roads and town closes of the medieval period radiate from the castle itself (PRO MR 897). Access was essential for its role in the thirteenth century when it played a vital role in supporting national politics as a major source of supply of bolts for crossbows (ch.6). Although wardenship of the castle also included an administrative role over the Forest and its resources, the arrangement of the bailiwicks (subdivisions) which formed the basis of Forest management (ch.5) did not respect the castle, or its location. The bailiwicks appears to have been based on an earlier pattern of land management around the central area of Cannop. At the end of the medieval period the centre appears to have been marked by the Wolfyng's Oak, where four major bailiwicks converged (PRO MR 879).

As the institution of 'forest' gradually faded in status after the fourteenth century, administration of the vert and venison returned to this central area, at Kensley lodge, with the verderers Court retained today in 'the Speech House'. The contemporary Forest had taken the name 'the Hundred of St. Briavels' which included most of the former Hundred of Lideni. Although Tidenham and Twyford Hundreds were reunited under Striguil there had been subsequent redistribution of parts to monastic houses (ch.8). Both hundreds disappeared when the Dissolution necessitated re-organisation of landholding and they became a detached part of Westbury Hundred. Annexation to the adjacent Hundred of St. Briavels may have seemed more obvious but the move would seem to have been politically motivated. During the medieval period privileges had been given to the forest inhabitants and maintenance of a discrete Hundred of St. Briavels would have prevented a wider distribution of the rights which are still exercised today.

Conclusion

The Dean appears to have retained its Welsh identity into the eighth century. An initial tribal group, the Ergyng, emerged after the Roman period, losing its independence to the neighbouring kingdom of Gwent by the sixth century. Subdivision of this kingdom, for religious purposes, created five divisions, one of which appears to have been Dean. Expansionist policies of both Mercia and Wessex threatened the combined Welsh kingdom eventually resulting in the breakup of the

kingdom into Welsh and Anglo-Saxon components. A Mercian client kingdom of Archenfield provided a buffer between warring factions. Retention of the Welsh church in parts of Dean, as well as a local dialect which preserved its Welsh heritage, suggests that some concessions may also have applied to Dean until the tenth century. A gradual change of culture is marked by the introduction of the Anglo-Saxon system of place-naming, including possible renaming the Dean population as the Dunsaetae, and by the earthwork of Offa's Dyke.

Ringworks and new settlement adjacent to the Dyke offered the capability to manage or defend points of access between the differing cultures, particularly in terms of raiding. Administrative divisions of hundreds would have provided the infrastructure for organizing manpower for any military action. External threats from seaborne invaders during the ninth century may have necessitated additional ringworks along the Severn shores and increasing co-operation between English and Welsh, the latter also being threatened by the increasing power of the northern Welsh kings. An agreement between the Welsh and English kings at Hereford in the tenth century finally confirmed Dean as English, with Tidenham given to the English Abbey of Bath. Welsh politics remained stormy for the next century. Insurrections along the borders and into the Dean during the eleventh century by the Welsh king Gruffydd were given seaborne aid from the Irish (Walters, 1993:135) - offering an alternative date and reason for the Severn ringworks.

The devastations in Herefordshire and Archenfield were still apparent at Domesday, but the Welsh had been repelled once more. A programme of defensive structures against the Welsh had already begun, with local landowners enlisting the help of Norman settlers. Stone castles were built at nodal points round the perimeters of Dean but not on its soil. The post-Conquest Norman lords who inhabited them were major landowners in Dean, in conjunction with the king. Although Dean had been transferred to Gloucestershire the increased power of the barons led to virtual autonomy in their Marcher estates and Tidenham once again became annexed to former Welsh territory under the lordship of Striguil. During the Anarchy the Earl of Hereford controlled the forest and further castles were built up to his boundary with the Striguil estates. Distribution of these castles does not suggest any particular direction for a perceived threat. Like manorial churches they appear to be located in

proximity to existing manorial centers. Although some appear to have replaced or modified older structures most took the form of mottes or towers. The materials used reflect the relative wealth of the owners, with a correlation of stone structures to the iron industry rather than agriculture. These castles were of short- term use and were either abandoned, destroyed or redeveloped and were replaced by a single site at St. Briavels in Crown ownership. It was St. Briavels which has endured, both as a structure and as a symbol of the privileges which the Crown bestowed on the inhabitants of the Royal Forest.

CHAPTER 5: VERT AND VENISON

Introduction

Forest and woodland is a topic which has been widely researched by Oliver Rackham. His books (notably 1980,1986,1989 and 1994) describe the physical features of such areas, their development and management techniques. His book on Hatfield Forest (1990) concentrates on the history of a specific woodland which has maintained much of its medieval integrity into the modern day and provides a reference for other forest research. The specific category of 'royal forests' has been the subject of modern research by C.R.Young (1979) and R.K.J.Grant (1991). A classic work by J.C.Cox (1905) provides chapters on individual forests, notably the Dean, which allows for easy comparison.

The woodlands of Dean have been widely researched by Cyril Hart, predominantly from a historical perspective. His books are highly detailed, but much of the documentation relates to the post-medieval period (1966,1978,1971,1973, 2001). Work for the medieval period itself (1987) is based on his transliteration of the Regard of 1282, a highly detailed, contemporary survey of the Dean for which he received a masters degree at Bristol University (1955).

Forest is a legal, not topographical, term which identified an area as being under forest laws in addition to common law and, as such, added a further political dimension to the Dean. Afforested areas were unenclosed areas in which animals were sustained and protected for hunting purposes. Designation as Forest did not necessarily change existing land ownership or land use. Forests had reached their widest extent by the twelfth century when there were at least two hundred and fifty overall. Dean Forest was one of ninety forests in Crown ownership which held the title of Royal Forest (fig.40). Vert (trees and herbage) and venison (animals of the hunt) were the defining elements of a Royal Forest. Protection of these living elements provided the framework for the medieval administrative structure.

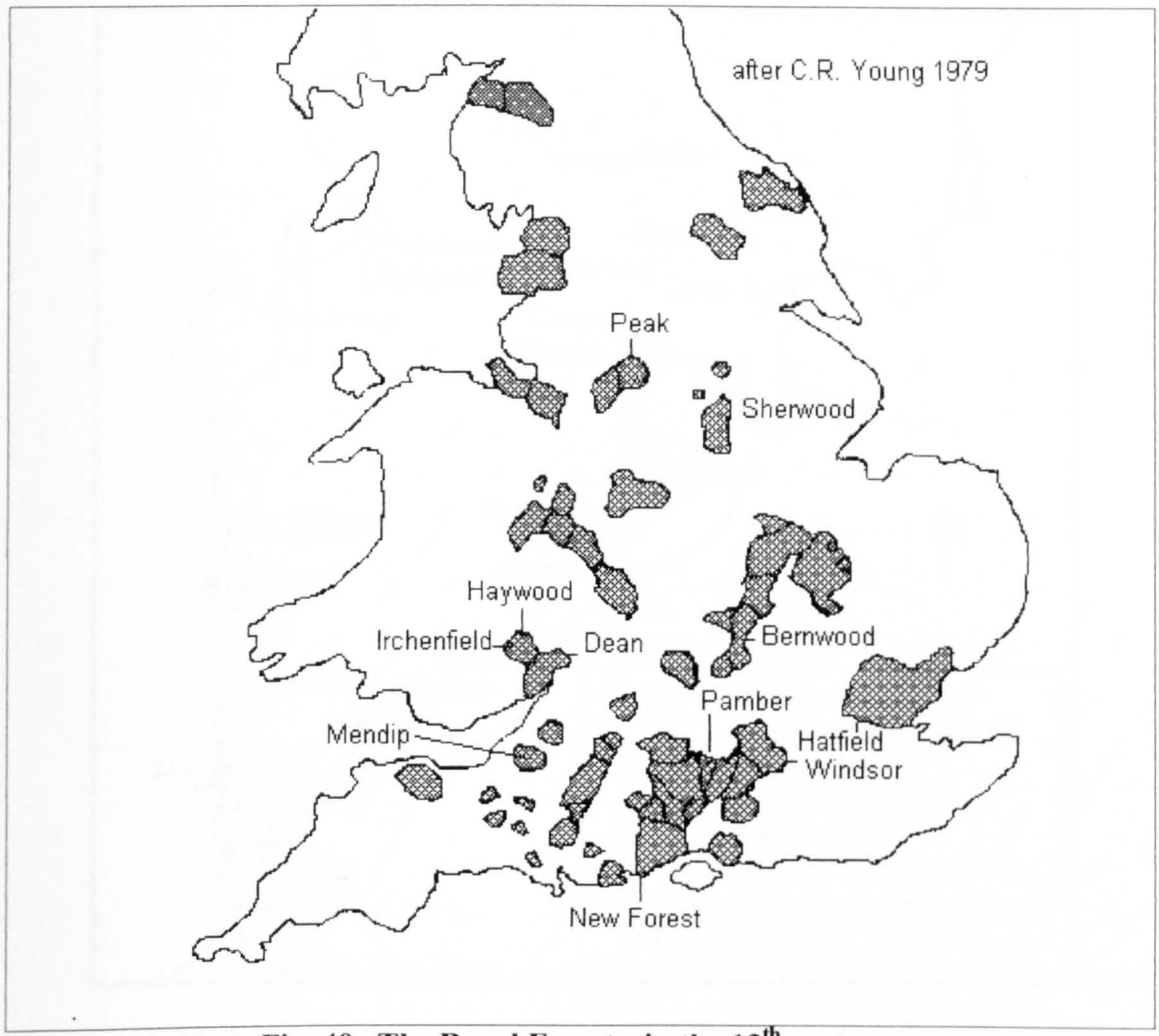


Fig. 40. The Royal Forests in the 13th century.
Named forests are mentioned in the text.

Hunting rights had been a royal institution in the Carolingian empire and were adopted into Norman society. The Conquest brought the system into England on a similar basis to continental organization (Grant, 1991: 7). It institutionalised the practice of hunting, which had been enjoyed on demesne lands prior to the Conquest (Hart, 1966:7). Royal demesnes usually provided nuclei for the institution but Forest Law had begun to spread well beyond these boundaries by 1086. 'Royal Forest', a Norman designation, provided the monarch with a resource reservoir; a forest had the potential for income from its products, display of privilege from its hunting and patronage through bestowing gifts and privileges related to its usage. Hunting itself might be seen as symbolic, representing the monarch's power over life and death.

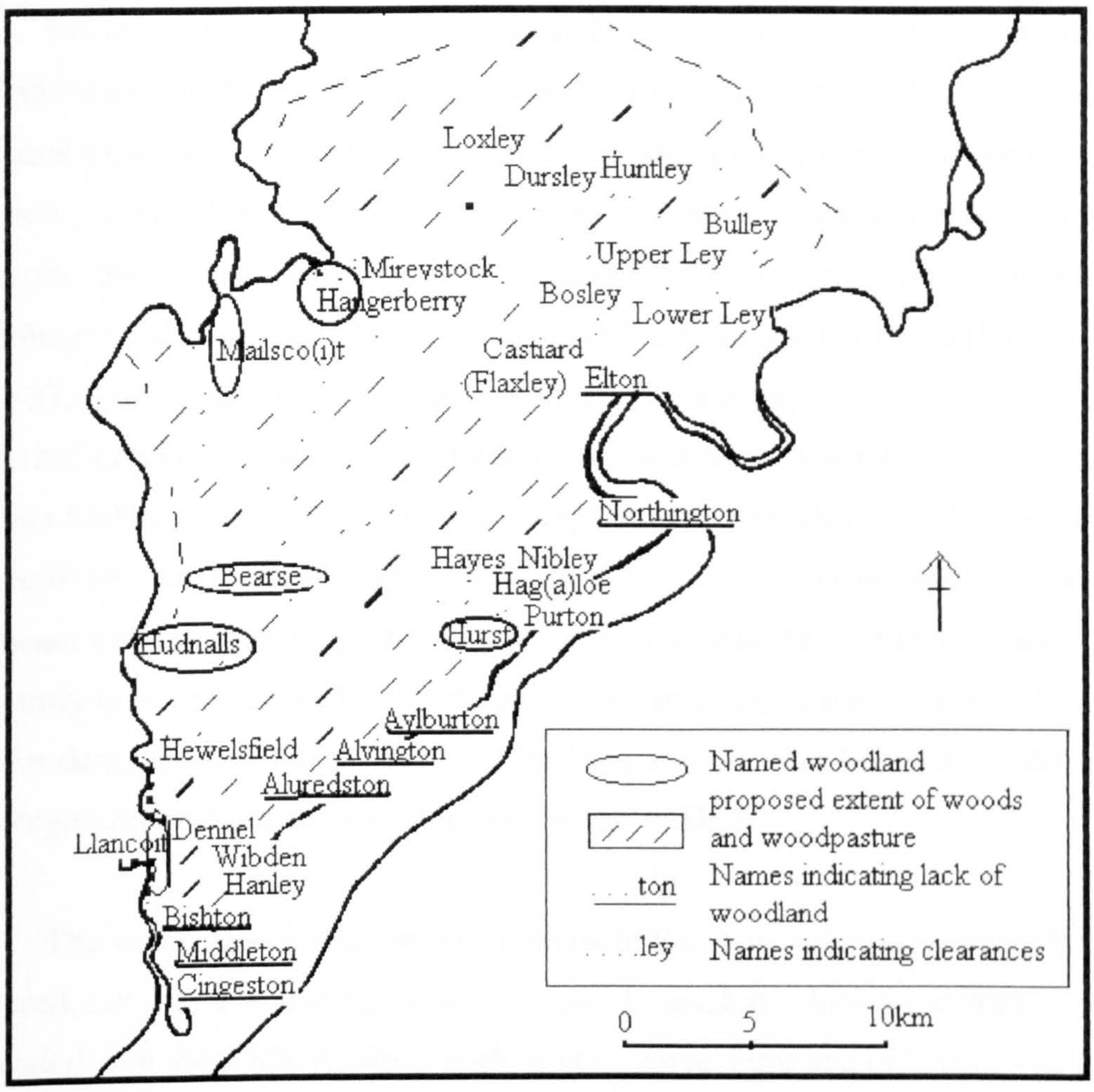


Fig. 41 Model of woodland and woodpasture distribution in Dean, based on Saxon placenames.

Indication of the extent of the eleventh century Royal Forest of Dean is given at Domesday (fig.41). Manors along the Wye and the west of the Dean are either described as 'by the king's order placed in the forest' - Hewelsfield (Morris, 1982: 32.12) - or as 'waste' -Redbrook, Staunton and Whippington, and Wyegate had been depopulated (Morris, 1982:E3, E4, E.6, 31.4). At Hewelsfield the narrow Bigsweir valley would have provided a topographical demarcation between the forest and the southern, peninsular area in which there was widespread use of the habitative term 'tun'. Population density may, therefore, have been the reason for its exclusion from the forest; the term is very rarely associated with a forest area (Gelling, 1984: 227). A similar reason would have determined the eastern limits of the forest; inland of the peripheral settlements. Although they were not designated as forest the majority of these riverine manors were also 'land of the king' (Morris, 1982:1.11, 1.13, 1.54-56).

Nearer to Gloucester the royal hundred of Westbury (with a detached part at English Bicknor on the west) was also excluded from afforestation. This arrangement produced a convex northern forest border which was straddled by the manor of Tatinton (Taynton Parva) (Morris, 1982: 37.4) with a spur to include the manor of Dene (the later manors of Mitcheldean, Abenhall and Littledean). Prior to 1066 its three thegns had been granted lands 'free of geld' for keeping the forest (Morris, 1982: 37.3). It suggests that the Dean's Norman forest incorporated at least one area which had previously been used for hunting. At Domesday ownership Dene passed to William fitzNorman. His family retained responsibility (together with the haies of Hereford) until the wars of Stephen (Hart, 1966:11-12). Administration, centred on the manor of Dene, may suggest the origin of the Forest name. 'Dene' appears previously to have had only localized application, referring to the *denu* or valley, but the new designation of Forest across the landscape would have linked the wider area to its organizational centre - therefore the Forest 'of Dene'.

The widespread Roman mining activity of the Dene valley (ch. 6) would have produced, not only a landscape of pits and spoil heaps, but a distinctive flora, associated with the acidic residues: such as yew, gorse, ferns and bilberries - repeated across the forest mining areas. The remaining afforested area was predominantly of red sandstone with thin, unproductive soils. A landscape which was sparsely populated and unfavourable to agriculture would conform to the pattern of topography for the imposition of Norman Forest law in England; from the heavy clays of Dorset through to Oxfordshire, or the sterile sands of Hampshire to Surrey (Grant,1991: 5).

Woodland

Forest needed established wood pasture – a landscape of standard trees with underwood and herbage - in order to support the deer population. Rackham suggests that within the Dean there was an unspecified area of wildwood - the last vestige of this landscape in England (Rackham, 1990:55). He bases this theory on thirteenth century timbers at Blackfriars Priory in Gloucester, presumed to be a royal donation of 1245 (*Lib. Rolls*, vol.11: 318). Dimensions of the Blackfriars oaks exceeded those of contemporary timbers used in prestigious buildings such as Salisbury Cathedral. North-eastern Dean was proposed as the source of this timber. A woodland landscape was identified in that area because of the distribution of the Anglo-Saxon term *ley*; the

term means clearings in, or near, wooded areas (fig.41). Although the presence of 'clearance' place-names might suggest contemporary woodland erosion, the proposed existence of this area as a wildwood is used to suggest a lack of contemporary settlement along the Dean shores of the inner Severn estuary during the Roman period (Allen and Fulford, 1990b: 319). Survey by the current author in this area (ch.2) has identified seabanks dating from the Roman period. Their maintenance indicates sustained and active communities all along the riverine area (ch.2) and make the existence of wildwood unlikely in these areas. Romano-Celtic field systems were recorded south of Welshbury Hillfort (McOmish & Smith, 1993:55) and Roman villas, roads, extensive iron workings and provision for industrial fuel would have utilised land to the north, south and west (fig.2) of the Dene valley. There would be minimal space for the retention of any ancient wildwood, although re-generative woodland is highly probable.

Managed woodland, in the form of coppicing, has been identified from charcoal evidence at Roman industrial sites at Chesters, Blakeney and Ariconium. Sixteen different taxa from 947 charcoal fragments were identified at Chesters (Fulford and Allen, 1992:203). Maple, Alder, Birch, Chestnut, Hazel, Hawthorn, Spindle, Ash, Holly, Poplar, Oak, Rosacea Panoidea, Sallow/Willow, Elm and Guelder Rose were found, indicating an environment of mixed woodland, but with a predominance of oak and hazel. An age range of seven to eighteen years, with signs of slow growth in outer rings, suggested coppicing. The assemblage and proportions are similar to that at Blakeney and contrast with contemporary use of oak heartwood at smelting sites elsewhere in the country (Barber & Holbrook, 2000: 33-61, 51-53). The use of different fuel in Dean suggests that there may have been a different availability of fuel; oak is preferable in terms of heat produced and heartwood would be a more convenient size for handling. Small diameter charcoal is less efficient for smelting because it crumbles and compacts in the furnace, eliminating air and reducing the heat potential. The location of the sites examined suggest that coppicing was widespread in the Dean, established well before the medieval period.

The Blackfriars timbers may, therefore, have come from isolated stands or individual trees rather than an area of wildwood in the northwest. A different location in Dean is also a possibility. Ancient woodland has been identified through rare

species of flora along the Wye cliffs around Lancaut (Countryside Commission, pers.comm). Lancaut, like Mailsco(i)t both have Welsh suffixes meaning wood and are in marginal locations, perhaps unaffected by needs of Roman industrialization, and were clearly wooded during the early Anglo-Saxon period . In eighth century charters Tidenham is described as 'from the woods, to the plain to the sea' (Rees,1840). 'Maera' (large structural timbers) were available in the tenth century (Robertson, 1939: 453) and yew provided a western boundary marker for Tidenham (Grundy, 1935: 237-253) - in similar position for this species today. Although the extent of the Saxon woodland is unknown, Offa's Dyke runs along the western scarp and may have provided a demarcation, confining potential ancient woodland to the steep incline on its west. Construction of the dyke itself would have cut a swathe through any pre-existing woodland above the cliffs, although there is currently no environmental evidence for contemporary topography. However the sinuous course of this earthwork near St. Briavels suggests field clearances and may relate to the Roman occupation at St. Briavels (ch.4).

St. Briavels was included in the forest at Domesday (above), but no related woodland was recorded. Anglo-Saxon manors required estovers in addition to agricultural land. These included rights (botes) for pannage, timber and firewood which were obtainable from woodland resources, perhaps at some distance: in Domesday the manor of Highnam had woodland 'sufficient for the manor' (Morris, 1982:10.8). Only seven of the Domesday settlements make specific reference to woodland: Dymock, Newent and Huntley in the north (Morris, 1982: 1.53, 16.1, 32.6), and Lydney, Tidenham, Aluredston and Hyde along the river edge (Morris, 1982: 1.55,1.56,31.2,32.10). Hart (2000: 41) suggests that the Domesday record implies that woodland was attached to these manors. Any manor would need the availability of woodland for its supplies; to mention woodland specifically may suggest some difference in its provision in these particular areas. They fall into two main geographical groups, both identified, from Domesday figures, as having the highest intensity of agricultural land (ch.3), and therefore more likely to have cleared areas of woodland in proximity to the settlements.

Competition for resources from manors which were in close proximity may explain the assignment of discrete areas of woodland. All the manors listed above

appear to have been involved in some geographical or political change: Lydney's manor was newly created. Its hundred included Aluredston which bordered Twyford Hundred from which Tidenham had been separated. Newent had been separated from Westbury manor. Huntley's name implies settlement in a clearance and later documentary evidence suggests that part of Dymock's woods had been reserved for the king's hunting (Crawley-Boevey, 1897: 18). Such changes may have necessitated clarification of the areas in which the manors were permitted their estovers.

The place-name 'common' identifies areas available to medieval manors. Woolaston and Alvington Commons lie on hill slopes above the vills, presumably the source of Alvington's eight sesters of honey at Domesday (Morris, 1982: E.8). Bicknor's common wood lay on the scarp edge (SO580 161) like St. Briavels' common, though St. Briavels also claimed rights in the adjacent Hudnalls Wood (Hart, 1966:383) as well as Bearse Common (SO 574 057). The latter lay at some distance from the vill, nearer to the abandoned manor of Wyegate. The name 'bearse' ('place of stakes') could indicate an element of pre-Conquest coppicing or pollarding. Unlike the vertical economy of the Severnside manors, manors along the Wye appear to have been arranged with their land parallel to the river, rather than stretching inland into the woodland. Although the Domesday records may reflect arrangements necessitated by the medieval royal forest, the manors pre-dated the Conquest. It may indicate that there was some form of forest in this area during the Anglo-Saxon period.

Woodland usage is implied by the word 'ley', an Anglo-Saxon suffix which means a clearing in, or near, a wood. In the Dean such place-names have a northerly bias (fig.41) but none appear in the Domesday records. It would suggest that pre-Conquest 'ley' settlements were small. They may represent expansion from an existing manor into its pasturage in the woodland in similar manner to the 'Dens' of the Weald. 'Dænn' (den) is a specific form of pasture - that of swine. In Dean it occurs as a place-name only in the peninsular area - at Dennel Hill (above Tidenham) and Wibden. Wibden had become a sub-manor by the twelfth century. It lay to the north of Waldings manor (cleared during the thirteenth century) and the smaller manor of Hanley. Hanley, like Huntley, has the remains of a moated site with a further moated site near Philpott's Court Farm c. 300m to its south-west (Pl.15).

Rackham has noted the association of 'moat in a wood' (Rackham, 1990 :112). Both place-names and earthworks suggest Anglo-Saxon woodland, north of the extant holloway running west from Sturch Pill, which was progressively eroded in the post-Conquest period. During the Anglo -Saxon period such an area of woodland would have separated the southern concentration of 'tun' settlements from a separate cluster of 'tuns' up-river of Woolaston. It would have placed Stroat, like Lancaut, in a woodland setting. The area to the north of Stroat is known to have been waste in the thirteenth century when the contemporary 'Regard' records areas comprising forty-six, thirty-three, and forty acres which were cleared by Tintern Abbey (Hart, 1987:9-11).

The landscape of un-named woodland in the south of Dean contrasts with the named 'woods' of the north (Hart, 1987:1-50); the term indicates wood-pasture. Woods were interspersed with 'greens' such as 'Nottwood Green' which suggest grassland, a term with a more general distribution across the whole of the area. Greens may indicate areas of woodland clearance in which re-growth was inhibited by unrestricted grazing. As new clearances without pre-existing rights any settlement which took place in them would need a designated area of woodland for support. Huntley appears to have used woodland adjacent to Birdwood, which was cleared in 1282 (Hart, 1987:44).

Further Anglo-Saxon woodland survived at Hangerberry (wood on a slope) near Lydbrook and Hurst (Lydney). 'Haies' remains as a name at Viney Hill (SO 667 063), Bullo (SO 676 102) and Bicknor (PRO MR 879). Haies were recorded in Domesday at Newent and Churcham and Morton (Morris, 1982: 16.1 and 10.11). They were hedges or enclosures, often wooded, in which deer could be caught or kept; an Anglo-Saxon method of capture was to use nets spread over a gap in a hedge (Walters, 1992:142). Churcham and Morton belonged to Gloucester Abbey at Domesday and their wood, measuring 1 square league, contained three haies. Two haies at Newent had belonged to the former royal estate and were retained by the Conqueror. Although Domesday ownership is not recorded for Viney Hill, it was in the possession of Flaxley Abbey during the thirteenth century. The archaeological remains of a haie can be seen in the characteristic bank and ditch forming an enclosure in Queen's Wood on the northwest of the Dean area (SO 675 275).

Such haies were distributed throughout the midland counties (Morris, 1982:1.34n). They would have occurred within a large tract of woodland from the Dean to Malvern and the Forest of Wyre (Morris, 1982:31.4n). Five early forests lay in Worcestershire and by the thirteenth century there was an almost contiguous line of small individual forests along both Wye and Severn (fig.40). The New Forest initiated a similar sequence of fifteen forests (with associated royal landholding) from Dorset to Oxford and London. The New Forest itself lay behind south coast landing sites from Normandy and supplied Winchester castle with raw materials. Castles and forests imply status and prestige, symbols of patronage and 'Normanisation'. Not only would they have been tangible expressions of the new regime in England, but would have been familiar institutions to the barons who had been allotted estates in politically unstable or defensive areas. The banning of weapons within forests would have mitigated against the danger of insurrection and a king could ensure loyalty by providing privileges, such as hunting rights, to his nobles. Forests may, therefore, have had a political dimension.

Hunting

The pre-Conquest manor of Dene, which had included a reference to its forest administration, was linked with the haies of Hereford under William fitz Norman (Hart, 1966:11-12). It would suggest that Dene continued to play a role in hunting. Mitcheldean, one of the manors into which the manor was subsequently divided stood near the crossroads of the Roman road from Monmouth to Gloucester (Margery, 1967: nos. 611 and 612A) and the Dean road (no.614) running across the Forest area; as such it would have provided an easy route for transportation of products from the Forest to the King's castle at Gloucester and beyond. There is no documentary evidence of any Domesday hunting, but the name Hart Barn (SO 675 184), adjacent to Heartbrake (Hart thickets) Hill, may suggest a possible post-Conquest site. Modern Hart's Barn Farm incorporates original medieval features of an oak 'barn-like hall'; oak was a privilege allowed to Forest officials and a barn characterized a head forester's bailiwick - used for salting and storing carcasses (Sargeaunt, 1960 :110). The de Dene family continued to hold both manor and bailiwick of Great Dene until 1319, controlling the whole forest from the Anarchy until 1155 when the Crown took control (Hart, 1966:11-12). Family trees illustrate how marriage alliances maintained

their early supremacy, connecting them to the Abenhalls and Greyndours, wealthy landowners and benefactors in the Forest of Dean during the Middle Ages (Maclean, 1881: 181-198). The sixteenth century owner of Hart's Barn was called Sergeant. 'Sergeant in fee' was an office, sometimes hereditary, created for forest officials during the reign of King John. It would seem that the family adopted its official title; it would have differentiated them from the branch of the de Dene family which controlled the subdivision of Littledean in the fourteenth century.

A barn would have provided a store for culled venison. Both Close and Liberate rolls allude to 'available stock' of venison from the Dean, and a similar pattern is recorded for Savernake Forest where 'venison and wildfowl are ordered to be kept there (Great Barn at Wolf Hall) against the king coming' (Sargeaunt, 1960:111). Forest officials provided this background management in addition to Crown orders for venison. The latter were fulfilled by teams of itinerant specialists who appear to have moved around the Royal Forests (*Lib. Rolls*, Vol.3: 500). Orders to the Constable of St. Briavels allowed their free movement within the forest. St. Briavels assumed administration of hunting in 1155 (above), demonstrating its role by the display of a hunting horn on the castle roof. The Wardenship of St. Briavels was initiated by King John, with accompanying reorganization of the landscape into nine (later ten bailiwicks), possibly to accommodate the extra officials from whom he could obtain revenue (fig. 42).

Four of the bailiwicks converge in the central area of the Forest near Coverham and Mailscot woods. These are shown as wooded on the 1608 map (PRO MR 879). Hunting by Edward I was specifically attested 'in Mailscot and Coverham joining the King's Perch' (PRO E32/332). A perch is an elevated stand from which the king could take his quarry. In the Dean 'Kings' Perch' lies close to 'Short Standing' which may represent another hunting site. A central position within the forest woodland could have ensured maximum administrative benefit, with the possibility of venison being driven in from any location for the King's sport. Leaves and branches were cut in these woods to feed deer in the snows of 1281 (PRO E32/332). Oaks were also felled for the King's 'wild beasts' at Abenhall (twenty) Blakeney(five), Bearse (five),Staunton (forty-nine), Bicknor (forty) Lea (six)

Mitcheldean (twenty-six). Distribution suggests that contemporary deer herds frequented the northwestern parts of the woodland - the area of the King's Perch.

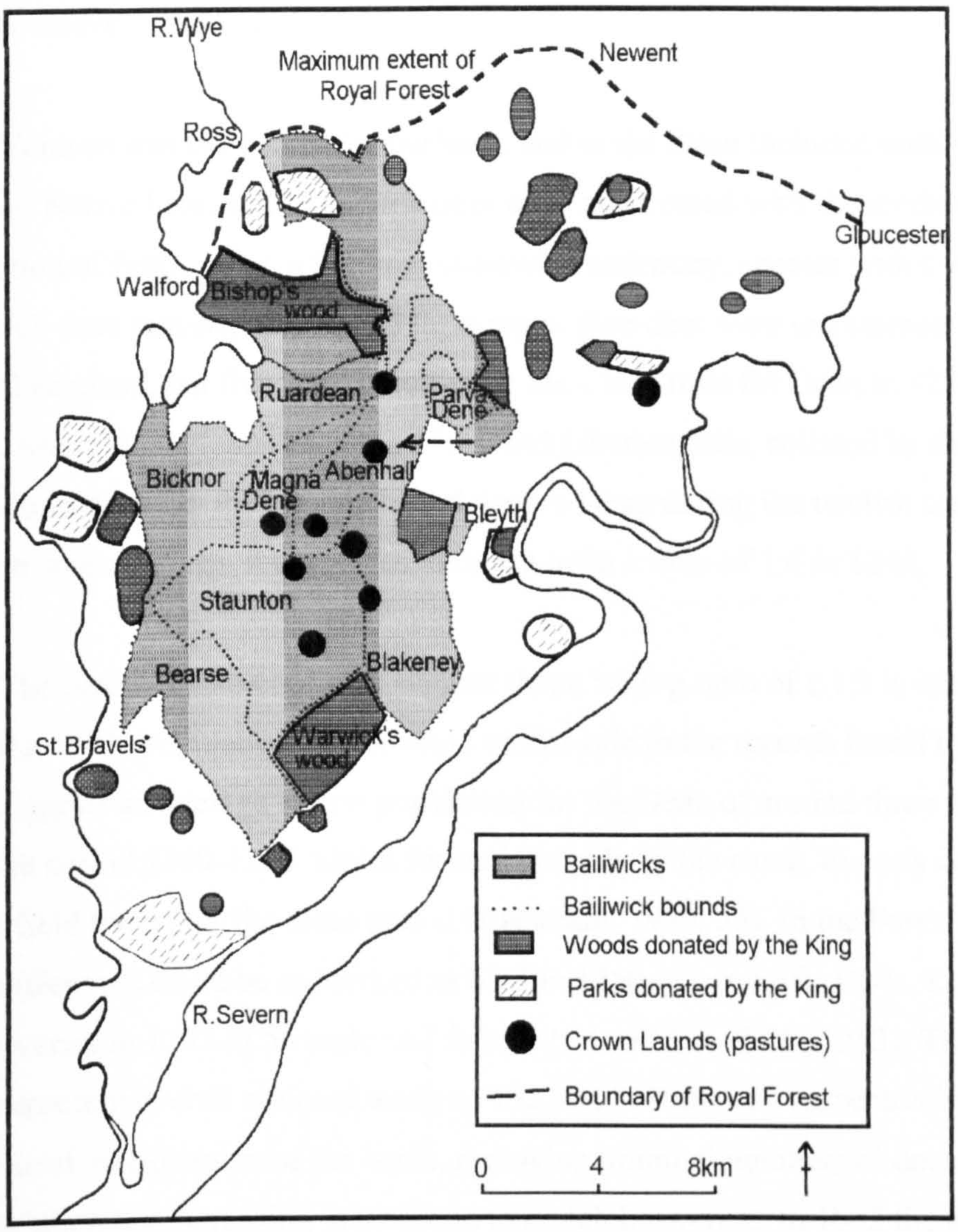


Fig. 42 Administrative divisions and Crown usage of woodlands.

One focus for the royal hunt was Flaxley Abbey which had to host hunting parties during the fourteenth century: in 1353 thirty-six pounds nine shillings and one penny was paid to Flaxley for damage caused by beasts of the forest and constant visits from the king 'varios et frequentes accessus nostros' (Crawley-Boevey, 1887:53-54). The Abbey also supplied storage, with seventeen hinds stored for the King at its grange at Ardland (Cinderford) in 1232, to be collected by the sheriff of Gloucester (Lib.rolls. 1232:193). Flaxley itself appears to have had no hunting privileges within the Dean. Its own interests lay at Dymock, outside the forest, as part

of the Abbey foundation grant. Henry II gave 'half the King's woods', followed by a grant of Henry III of 'half his nets'. These had formerly been 'for the convenience of my men' and given so that 'Flaxley would not interfere with any other person' (Crawley-Boevey, 1887:18).

Venison was the quarry for the hunt, and in the Dean included both deer and wild boar. Native herds of red and roe deer were augmented with the medieval introduction of fallow deer, a herding, somewhat sedentary, species with a woodland diet, which does minimal damage to farm crops. Roe deer were uncommon in medieval England, but five were recorded in the Close rolls for Dean in 1237, others in 1282. Numerous references in the Close and Liberate rolls, collated by the author, suggest consistency in the hunting of red deer in Dean during the twelfth century, usually in single figures. It compares to fallow with a ratio of 1:4 in 1240.

The breeding habits of deer suggest that a killing ratio of c.1:3 is necessary to maintain a stable population. Application of this rule to the records found by the author suggests an average fallow population for the Dean of around three hundred during the period 1240-1274. Males formed the bulk of the catch, directly contrasting with Hatfield Forest for the same period (Rackham, 1989: 55). In the Forest of Dean gender difference could be as marked as 63:3 in 1250 (*Cl.and Lib. Rolls,* 1250) but with a reversal in 1253 of 56 male : 67 female (*Cl.and Lib. Rolls*, 1253). These two figures represent overall notional totals of 198 and 369 animals respectively. They suggest local management of the herds, removing minimal numbers of does from a low population but increasing in response to a high birth- rate. In 1662 the estimated number of deer in the 'Forest Report' was three hundred (Hart, 1966:287) and suggests a consistency. Comparison with post-medieval figures in the 1538-9 Royal Game Survey, North of the Trent (Cox, 1905: 77-78) suggest that this number would fall within a national average for park herds. It was far lower than Sherwood Forest's one thousand red deer and suggests that the Dean was not a major hunting area.

In the thirteenth century the Dean venison resource was used spasmodically, with greatest numbers recorded for the 1250s (fig.43). The figures are, however, based on recorded numbers only and are likely to fall below the actual totals for the Forest. Gifts of the king's deer were distributed on a local level with the Constable

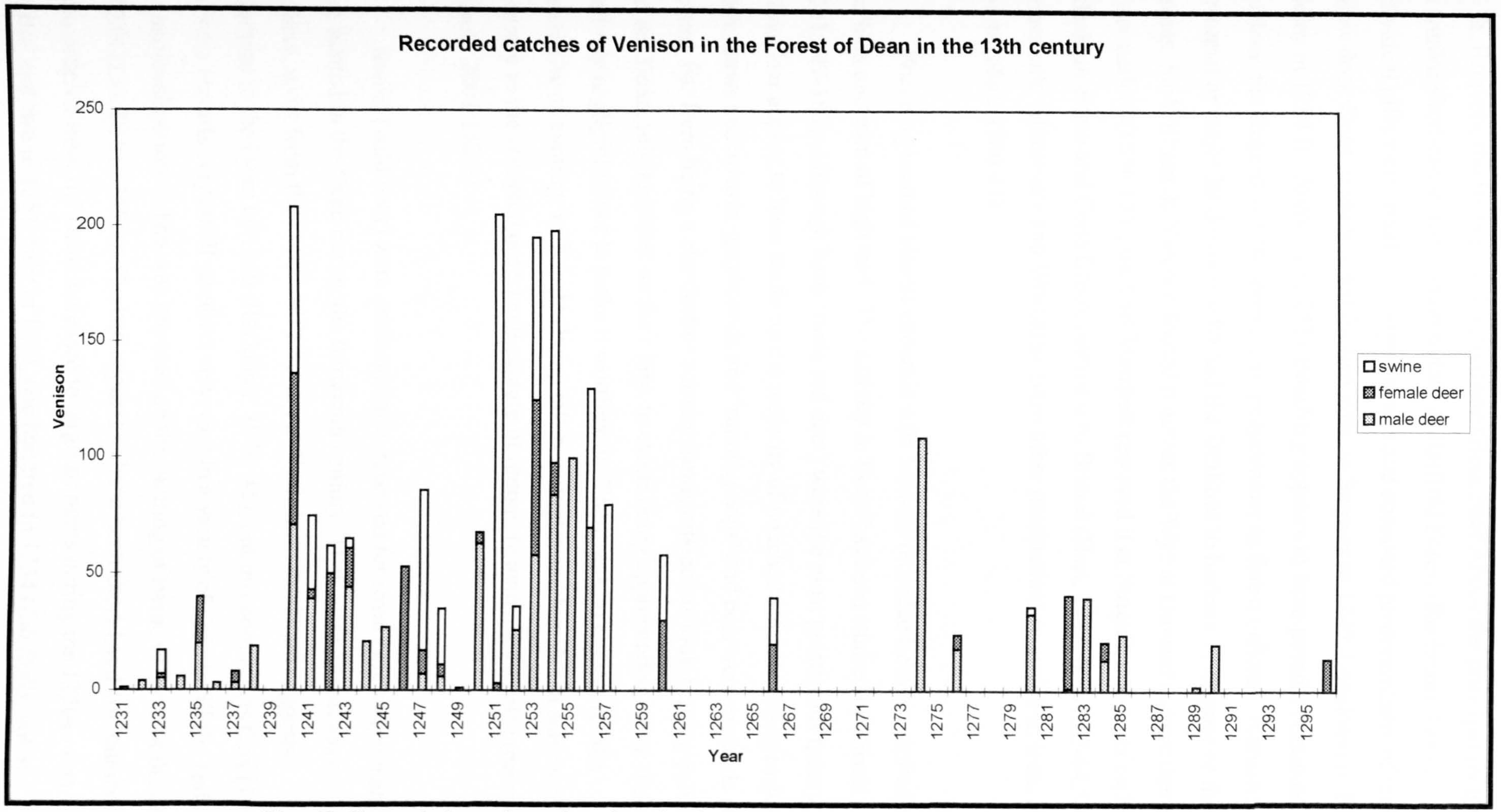


Fig. 43. Recorded catches of venison in the 13th century: no differentiation of deer species

of St. Briavels, the Bishop of Hereford and Gloucester Abbey the principal recipients - a similar short-range distribution to that of Hatfield Forest (Rackham, 1989). Individual gifts were usually in single figures and consisted predominantly of male fallow deer. Does predominated for live gifts: to Sugwas in 1240, Lockinton in 1250, Sudley in 1284 (*Cl.Rolls*: 1284:253). Poaching appears to have posed a continual problem; the Regard of 1282 documents perpetrators as forest officials, monastic personnel or major landowners who had the facilities to harbour or dispose of the carcass: Sir William de Valence ferried it across the Wye at Doward (where there was a deer park (SO 536 158), the Earl Marshall received it at Striguil, and ports on his Tidenham estate and Cone Brook carried it to Bristol (Hart, 1987: 60-61,63-64,53). Monmouth, Gloucester and Worcester were other destinations recorded in local Eyre Courts (Hart, 1966:41).

Poaching seemed almost endemic with liaisons recorded between skilled local poachers and men of high rank. The activity in Dean has been studied by Birrell, (2001:147-153). Although harts (male red deer) were the most prestigious quarry, fallow deer appear to have made up the majority of poached animals, being easier to catch. Bows and arrows, greyhounds and 'running dogs' and nets were methods of capture. Far from being a clandestine activity, some aristocrats took hunting parties into the Dean, relying either on their rank to evade being apprehended, or on the relatively negligible fines to make it worthwhile. There was no respect for the seasonality of hunting, with males being taken in winter and females in summer (contrary to the accepted order) and capture of immature animals was also recorded (Birrell, 2001:152-3).

Swine (wild boar) were predominantly reserved for royal consumption and were hunted in the Dean during the thirteenth century. They were almost extinct in England, apart from the Forest of Pickering in Yorkshire; Rackham suggests extinction in the Dean by 1260 (Rackham, 1989: 45), but this contradicts Cox (1905: 31), who records very small numbers surviving in a variety of Forests till the end of the medieval period. A ban was imposed on the hunting of swine or sows in the Dean in 1245 (*Lib. Rolls* 1245:9). The ban appears to have been short-lived and numbers of swine ordered from the Dean increased to large amounts during the 1250s - two hundred and two in 1251, fifty in 1253, one hundred in 1254 (*Lib.Rolls*, vol.3:

6,150,183). All were to be prepared by salting, with their heads pickled, prior to dispatch. The increasing numbers suggests a response to their unavailability elsewhere. A name change can, however, be observed in later records, with *porcos* sometimes replacing *apris* (wild boar), suggesting that domesticated species fulfilled orders. With three swine (apris) mentioned in 1279 (*Cl.Rolls*) the proposed date for their local extinction is extended.

References to the Dean in the Close Rolls suggest that levels of hunting authorized by the Crown were greater during the early thirteenth century than in the later part of the century (fig. 43). The same century saw an overall increase in the physical extent of 'Forest', both in the Dean and throughout England, though the bounds of Dean vacillated (Hart, 1966:13-14). By 1282 Dene (sic) included the entire area between Wye and Severn, with a northern boundary from Walford to Gloucester via Penyard, Bollitree, Linton, Gorstley, Oxenhall and Newent (Hart, 1987:62-63). 'The Prior of Newent could not open his door without entering the Forest' (Hart, 1987:59). Although increased afforestation caused controversy it gave the king a wider resource from which to bestow privileges. Permission for others to hunt in the Forest remained rare, though Ralph of Abenhall, the Abbot of Gloucester, Richard Talbot, the chief sergeant of fee, and the deputy Constable of St. Briavels had hunting dogs in 1282 (Hart, 1987:59). Giffard of Brimpsfield (a warden of St. Briavels) was the only regular huntsman of red deer, receiving permission during the 1280s (*Cl.Rolls.* 1280-6: 21,89,392). Those who had been denied such privileges appear, simply to have taken matters into their own hands by poaching (above). Permission to create their own hunting area -parks and chases may have been one response to try to limit poaching and retain exclusivity in use of the royal forest itself.

Parks, Warrens and Chases

The Marcher Lord of Striguil was granted a chase on his Tidenham estate and 'a certain park with wild beasts' recorded in 1306, was worth '½ mark besides the support of the beasts with the underwood in the same' (Fry, 1910:73). The name Tidenham Chase survives on the plateau, with 'The Park' and 'Park Hill' (ST 556 994, ST 568 996). The Chase must have extended to the boundaries of the Royal Forest, because it included the wood of Aluredston (Hart, 1987:45). On the west of the Dean Monmouth Chase belonged to the Lordship of Monmouth. It included

Hinderleys, Wyesham and Hadnock woods, much of which was cleared for charcoal in 1282 (Hart, 1987:45). Although *nativi* of hamlets of Monmouth were still bound to attend hunts in Hadnock Wood in the fourteenth century, by the end of the century almost all the demesne had been leased following 'the pestilence', 'with murrain and lands in decay' (Rees, 1924: 254). There was no economic incentive to retain the land in the Forest of Dean and it remains excluded as part of Monmouthshire. It was wooded in 1608 (PRO MR 879).

In northern Dean the Church of Hereford owned Lax Penyard Chase, prior to fourteenth century ownership by the Goodrich estate (Cave, 1982:7). Pales were given to William de Valence, owner of Goodrich, in 1247 for enclosing a park at Morton in Minsterworth (Hart, 1966: 264) - perhaps perpetuating a Domesday haie of Gloucester Abbey (above). Its location is not known but it was near the extensive thirteenth century park of Ley (Hart, 1987:60) which bounded the northern borders of Walmore Common (PRO MR 879). Gloucester Abbey had received tithes of venison from the Forest in 1233 (Hart, 1966:12) but also claimed rights of warren on its lands, with eyries in Birdwood. In the forest itself composite claims to eyries, coal and honey appear to have been allotted to one individual per bailiwick in 1282 (Hart, 1987:55-58), although the king retained these rights on his demesne lands.

To the north of the forest the Talbots of Eccleswall had been permitted warrening rights by 1282. This complemented their iron rights in their northern estates around Penyard, in similar manner to the rights of the Earl of Warwick in Lydney Wood (Hart, 1987:55). Further imparkment of one thousand acres of open land and fifteen acres wood was granted to Gilbert Talbot (Lord Chamberlain) at Linton with free warren in 1329 (Duncombe, 1996). A nearby park at Oxenhall was retained into the sixteenth century. Further east Taynton Chase expanded the warrening rights owned by the lord of Taynton. (Hart, 1987:37). Its creation seems to have restricted development of the vill itself, which disappeared by the end of the century (Williams, 1996).

Taynton Chase lay in proximity to the manor of Taynton. The manor appears to have had a number of high status features including moated sites, fishponds, a swan pool and a castle motte which were identified as part of an earthwork survey

(Williams, 1996). A similar group of landscape features was found, by the author, at Bullo. An ovoid area delineated by tracks and within which field names included 'park' suggest the presence of an unrecorded medieval park. A ditch and bank forms part of its southern bounds near Hulins (proposed as a motte and bailey, ch. 4). On the west lay the woodlands of Sudrug (Southridge) (Chubb, 1912). Bullo manor, and Sudrug belonged to Gloucester Abbey which had itself created a park at Highnam in 1332.

Parks indicated the wealth of the owner because of the expense of initiation and maintenance. They were usually enclosed by a ditch or earth bank with palisade, designed to keep herds of fallow deer from straying, for exclusive use by the owner. Deer leaps, or lowered banks, allowed deer to enter, but not leave, such parks. Both woodland and grassland (laund) were needed for the fallow deer that grazed at night and sheltered during the day. 'Penyard Park', owned by the Talbots, enclosed a domed hill. Sixty acres of wooded hillside still surround a steeply inclined laund of seventy five acres on the undulating hilltop. On the southeastern edge of Penyard laund are the archaeological remains of a multi-period site known as Penyard Castle, dating from the twelfth century (ch.4). Research on castle distribution in Hampshire suggests that private castles do not seem part of forest landscapes (Hughes, 1989: 29). The castle sites noted in Dean predate the expansion of the afforested area (ch.4) and seem to form a southern extension of the Herefordshire landscape of haies and castles. Penyard appears to have developed into a fourteenth century hunting lodge, with its owners' seat elsewhere. Lydney suggests a similar development with a shortlived castle survived by a park which extended across to the haies of Viney Hill (Casey, 1932:240-261)

A park appears to have existed at Awre, referred to in 1270 as 'eighteen acres of pasture, inside and outside the park' (Madge, 1903:145); its underwood was worth fifteen shillings a year. Its location is unknown but Lippiat Manor (deriving from 'hliep-geat' - deer leap) was suggested (Dean Archaeology Group, 1998:13). Extant earthworks lie to the southeast of Awre church. This site lies adjacent to a drove road running between the vill and its arable fields and would not suggest a park location. Common use of 'Awre' as an alternative to Bledisloe hundred may mean that the park was not directly connected with the vill. On place-name evidence Hagloe would

suggest a pre-Conquest hunting site - haga (hunting enclosure) hill. Modern roads outline an ovoid area between Hagloe House and Oldcroft (SO 676 062). It lies c.1.5km from the Hayes area of Viney Hill, separated by Nibley (a clearance name).

As in the northern area of Dean there is a cluster of moated sites near Hagloe: Poulton (SO 692 066), The Ledges (SO 687 067) and Little Box (fig.11). The latter lay near 'Woodend' in Awre, which suggests a former wooded environment. A further moat was found (by the author) near Box Farm (SO 691 086) (Pl.16). It was associated with a holloway leading to Cockshoot Bridge below Bushy Hill on the edge of the Box estate. The name Cockshoot is randomly distributed across the forest and indicates a further form of small game hunting. Rackham has observed the common association of 'moat in a wood', although he says that this feature is lacking in the Forest of Dean (Rackham, 1990:112). Surveys of moated sites (Rawes, 1978. Dean Archaeology Group, 1998), as well as the author's discoveries, provide evidence to the contrary.

Assarts

Moated sites can have many different contexts, but, as observed by Rackham (above) they are commonly associated with woodland, particularly in the thirteenth century. Their location in Dean may illustrate the potential extent of the thirteenth century woodland. Erosion of the perimeters of such woodland appears to have continued in tandem with the expansion of afforestation. Large-scale assarting (clearances for agriculture) was expensive in time, investment and labour and therefore might be expected to be undertaken by the wealthy. Twelfth century Crown assarts focussed on the northeastern edge of the Domesday forest. Assarted land in the Vale of Castiard and at Ley and Walmore was given to Flaxley Abbey (Crawley-Boevey, 1897: 18). Increase in Flaxley's estates (ch.8) would have created an agricultural corridor between the central forest and the northern area of woodland. Within the latter Gloucester Abbey's woods of Hope Mansell were recorded (in 1281), as overgrown, unsuitable for beasts and an area in which wolves would live (IPM, 1281:57) and was gradually cut down without replacement. Kilcot wood had been removed by 1306 (Hart, 1966:77). Separation and unsuitable conditions for hunting would seem to have influenced permission for removal. Economic reasons determined western assarting; land was needed to support the growing mining population, though assart locations

appear to be as marginal as possible. Licences allowed the Bishop of Hereford to assart along the Wye and the reeve of Ross made substantial assarts (Hart, 1966:39-40). The Monmouth to Staunton area and the Wye at Ruardean were cleared during the thirteenth century with gradual assarting along the Redbrook to Clearwell valley. The latter was an extension of Ash Ridge to the west of Coleford. Ash is one of the most versatile timbers for carpentry and construction. Clearance may relate to contemporary requirements for such timbers. Other clearances, indicated by names such as 'Aspen Ridding', may suggest that areas for assarting were influenced by the nature of species present and was restricted to areas which avoided the preferred oak and beech woodland.

The Regard of 1282 documents substantial monastic assarts (Hart, 1987:9) mainly in the south of Dean. Tintern Abbey cleared 246 acres in Woolaston and Tidenham. The land may have provided the timbers to construct Ashwell Grange or the contemporary extension of Woolaston quay (Fulford, et al, 1993). Dimensions of the quay's quartered timbers indicate availability of trees of considerable girth. In 1282 local woodlands continued to be eroded by tenants of Llantony Priory who held numerous small landholdings in Alvington, and St. David's hospital assarted land at Spital Mesne, near Lancaut (Hart, 1987: 8-11). An earlier Regard of 1258 had recorded over one hundred assarts, each allotted to individuals (Hart, 1955). Similar individual enterprises were recorded, or alluded to, in Tidenham in the 1282 Regard but were not enumerated through lack of specific information. Some assarts were enclosed, like those of Flaxley (Hart, 1987:4) with a ditch and a hedge. Many were 'old' and paid continuing fines (later becoming rents) and represent permanent changes in the landscape.

In the fourteenth century clearings of ninety acres at Littledean and sixty at Abenhall (Hart, 1966:59-60) extended the woodland erosion begun by Flaxley Abbey. One hundred acres were also assarted in the Mailscot/Hoarstone area in western Dean (Hart, 1966:59). Assarting largely concentrated in the south, effectively removing areas of woodland/waste between the greens, the ridings (below) and the parkland. The Bishop of Llandaff's church at Newland was re-granted tithes from such forest assarting in 1305 (Hart, 1966:59). One hundred and six acres of 'the king's own soil' were assarted at St.Briavels, Newlond, Drakehoerd, Overeuse and Holiwell (field

names between Clearwell, Noxon Park and St. Briavels) by 1337, with two hundred and eighty acres of waste cleared at Noxon in 1321(PRO C139/115). Such land provided tenanted holdings 'because it is two leagues from cover and animals do not go there much and hitherto the King has had no profit from this waste and will not in the future unless it is rented out at two pence' (IPM 1337: f.239). Similar reasons allowed a contemporary expansion of Stowe Grange (belonging to the Monmouth Abbey of Grace Dieu) in the same area. The result of this assarting was the creation of an agricultural plateau which isolated a string of narrow linear woodlands from the central woodlands. This string, marking the original outline of the forest, stretched from Rodmore Grove to St. Briavels in 1608 (PRO MR 879). Survival appears related to topography, the woodland lying either on slopes or in valleys.

The scale of such assarts appears to differ from the contemporary trend in England which consisted of small private assarts of less than two acres. Although recording only two acres in 1333 (when it appears to have revived its fishing interests, ch.7) Flaxley Abbey received substantial income from new Royal assarts in 1353 (Hart, 1966:60). A major eastern assart at Zarkely (modern Yorkley) belongs to this period. Yorkley's erosion of the woodland can be seen clearly on the modern map west of Horage Wood. Both parts of the word Horage (hoar and edge) mean 'boundary' (Onions, 1983: 969) and this wood would have marked the division between forest and Lydney Park. Retraction of the boundaries of the forest in 1306 redesignated woodland outside as purlieu (woodland still under Crown control). Retention of the name in an adjacent area (SO 658 052) suggests contemporary woodland in this northern area of the former Lydney Park: Lensbrook down to Plummers Brook.

Further south, areas of waste, recorded in 1282 between Lydney and Aluredston, correspond to areas where felling had been permitted from 1247 (Hart, 1966:34). Proximity to the river may have influenced this removal (some of the king's gifts originated from these woods) because of the cost of transportation. With seven boats, Lydney (Newerne) was the largest recorded port on the Severn in 1282. All these boats traded in wood (Hart, 1987:52). Illegal trading in wood to Bristol used Purton and Awre, but in the north of Dean Gloucester Abbey carried timber (with corn) from Duni (fig.26). Substantial clearances were occurring in the north, from

Littledean to Penyard, and 'all the woods of Flaxley Abbey' were also waste (Hart, 1987:44-47). The latter included Welshbury, Timbrigge, Littledean and Chestnuts where the Abbey had, from its foundation received tithes of the fruit. Firewood rights were given in Flaxley woods adjoining the Abbey. These woods remained in the sixteenth century but are illustrated as being stripped standards with underwood (PRO MR 379).

Flaxley, like Tintern, was engaged in the iron industry and foundation rights to unspecified timber in the forest had been used to excess. Curbs had been implemented, firstly by quantity and then by restriction to a designated area - Abbot's Wood, near Littledean in 1258 (Crawley-Boevey, 1897:109-10). This was coppiced to conserve stocks. Tintern had similarly been given Harthill Wood, but it, too, had been wasted by 1282. The *Taxatio Ecclesiastica* records five shillings annual income from coppice at Ashwell Grange and by 1319 Tintern was coppicing on a four year cycle in Woolaston manor (PRO C115K2/6683 ff91-2). Dean's diminished woodland resource was described in 1282- 'all the king's woods are wasted of old and anew by gift, sale and his own use, and by the forge of the monks of Flaxley' (Hart, 1955: n.p).

Products and Industries

The main cause of waste in Dean appears to be charcoal production. Although the old English term 'ryding'or 'rydding' can simply mean clearance, in the Dean it frequently occurs in relation to areas for which 'clearance' for charcoal is being recorded. It appears to refer usually to the removal of underwood. In 1282 almost 1,000 acres of such clearance was recorded in Blakeney Bailiwick. The acreage compares with 252 ½ acres of clearances in Staunton, 124 acres in Ruardean, 193 acres in Bicknor, 54 acres in Mitcheldean, 34 acres in Bearse, six acres in Lea and only one in Littledean (Hart, 1987: 27-42) - areas which had seen intense industrial activity earlier in the century (ch.6). Given the destruction of Tintern's contemporary woodland for its iron industry (above) it would seem probable that the common incidence of the field name 'ridding' on the hillside above Woolaston and Alvington is related to clearance for charcoal production. While some 'riddings' may have been temporary others remained cleared permanently; S*pon ridding* was recorded in 1282 (Hart, 1966: 253), but the cleared area was later used for a settlement known as Spoon Green. It was one of a series of greens along the southern Forest border.

Charcoal is a manmade fuel, created by the slow burning of wood in a clamp to remove moisture and impurities and the resultant (pure) carbon produces a more fierce heat on subsequent burning - necessary to smelt iron. Traditionally wood is built into a central wigwam, or chimney shape, and branches piled round it creating a domed shape which is then covered to exclude most of the air. The covering material is preferably turf, which is easy to handle, but earth can be used, often over a bed of bracken to prevent it falling through the branches and clogging the structure. Burning embers are fed through the 'chimney' to ignite the clamp. Charcoal-burning sites can be detected archaeologically as circular platforms. A multi-period site on the north slope of Chestnuts Wood was associated with a well which contained artifacts, ash and maple-wood from the site (Scott-Garrett, 1956: 199-200). There is no indication of selectivity towards any particular species on Dean sites.

Such charcoal burning sites are widespread throughout the Dean, with as many as a hundred on Welshbury Hill alone. Few have been examined or dated, though on Welshbury many on the crest of the hill have a twentieth century origin (Townley,R. pers.comm). Use of specific platforms may be a secondary development. The list of stumps counted in the Eyre of 1282 is noted as incomplete because of their destruction by charcoal pits made on top of them (Hart, 1987:43). As well as destroying evidence of any illegal felling this would be a method of ground clearance - possibly reflecting the origin of the technology. It would mimic the pattern of woodland clearance proposed for Pamber Forest (Stamper, 1983: 41-53); secondary clearance of waste, scrub and stumps would have followed the non-replacement of standard trees which had been required for castle building programmes.

Timber from Dean supplied, not only St. Briavels and Gloucester Castles, but provided royal gifts of raw material or manufactured products to Bristol, Monmouth, Caldicot, Goodrich and Chepstow castles during the twelfth to fourteenth centuries (Hart, 1966:30 and 60). Many grants, such as that for Chepstow in 1228 (Hart, 1966:30) specify that they should be removed where their loss would not damage the cover. Oaks were also supplied to local dignitaries, individuals and monasteries, minimising the high cost of transportation (two to four times the sale value), with

occasional gifts further afield, such as to Winchcombe and Hailes Abbeys (Hart, 1966: 26-8).

Extant remains of local structural timbers have a bias towards the northern area, above Newnham. Examples can be seen at Newent, near the church and in buildings around the Rodley peninsula. Often remains are embedded in later structures, such as at Hyde Farm (Ch. 4) or in Littledean High Street. Monk Farm and Gaulet Farms are based on cruck frame structures as are the barns at Hyde and Dymock. A well-preserved example of a hall-and-passage house, inside a partially moated site is at Lower Ley farmhouse. Inside crucks representing several stages of roof heightening can be observed. A coin dated to Henry II was found and is in possession of the owners. The date would correlate with land clearance (assarting) noted in the Flaxley cartulary (Crawley-Boevey, 1897:18) and would suggest a source for the timber.

Given its riverine location, bridges and ships would seem a likely use for Dean's timber. Local bridges did consume numerous oaks throughout the medieval period (ch.3), but references to shipbuilding are scarce: a single tree provided for the ferry at Newnham in 1238, 'engines' delivered from Lydney in 1226 (Lib.Rolls, Vol.5: 221), three keels to Payne of Lydney 1266, with a piece for a mast the following year. Relocation of ship building to the Cone in 1664, because of silting, indicates such an earlier industry in the Lydney area (Hart, 1966:163). Shipwrights and ships carpenters at Hagloe, Blakeney and Etloe in 1608 (Smith, 1902:56-7) also suggest local shipbuilding, presumably at Gatcombe Pill.

By the sixteenth century Welsh port books refer to Newnham, Awre, Westbury, Gatcombe and Horsepyll (Stroat) boats, but no evidence for local medieval shipbuilding has been archaeologically detected. Timber was supplied for boat building elsewhere, notably to John Smythe of Bristol. During the 1540s he purchased 'a kelle and stem and stern post for my bote and seven knees' together with chestnut, oak and elm timber. Relative costs ranked chestnut the most expensive followed by oak, beech and elm (Vanes, 1974: 45). Procurement of oak from Hereford via Newnham in 1545, including thirteen shillings and four pence carriage, could imply

local shortage, although a total of 2,400 pieces of oak were transported later that year, plus substantial amounts of elm.

In the Close and Calendar rolls only 1598 trees were gifted during the whole of the thirteenth century (Hart, 1966:263-266), far short of the 9,900 stumps of oak, beech and chestnut. recorded in the Regard of 1282. Distribution of the stumps suggest that removal of many of these were related to expansion of the iron producing vills. Crown timber sales may have accounted for some of the rest: sales of 935 'inferior' oaks were documented in 1282. More than three thousand pounds was raised by sale of trees and underwood, mainly during the period 1255-1301(Hart, 1987:25-6) although no numbers are given. Gifts consisted chiefly of trunks, but underwood and residues from trimmings were sold for charcoal: seven pounds seven shillings for old branches and underwood for charcoal was recorded 1276-81 (Hart, 1966:44) but this amount was far less than the twelve pounds and seventy pence worth required to fuel a single forge for a year.

Charcoal consumption appears to have been a continuing problem. Fuel for furnaces had been restricted to dead timber, maple, thorn and hazel in 1237, and following 'great destruction' recorded in the 1270 Eyre roll, charcoal pits were banned (Hart, 1966: 46, 44). However 2,990 contemporary charcoal pits were recorded in the Regard of 1282. They were distributed through the ten bailiwicks: 659 in Abenhall (including the use of at least two acres of chestnut woodland), 417 in Blakeney, 92 at Bearse, 1,121 at Staunton, 80 in Bicknor, 170 at Ruardean, 126 at Mitcheldean and 25 at Littledean (Hart, 1987: 25). Apart from Blakeney, there is a decidedly western and northern bias - the areas of iron production. Documents of 1278 and 1279 show that pits were rented out to individuals (Hart, 1966:44-45).

Although data is limited analysis suggests that spacing of charcoal pits appears to vary: 100 pits in 160 acres at Knockalls Wood, 80 in 87 acres at Mailscot, but all 25 charcoal pits at Littledean appear to have been located in a single acre (Hart, 1987:43). The concentration at Littledean may relate to its iron industry and suggest that materials for charcoal making were being brought in - perhaps from the large contemporary clearance at nearby Blakeney. Contemporary assarting may be a further source of supply, or excess material from clearances for expansion of housing at the

vill (Hart, 1987:5). The circumstances in this case may have been particular to the requirements of Littledean itself. In general the number of charcoal hearths and the diversity of and widespread nature of place-names suggests that it was a mobile industry, comparable with the mobile iron forges. The figures suggest that the size and spacing of areas licenced to individual burners during underwood clearance would have been approximately one acre.

Decrease in afforestation in 1306 accelerated tree removal in northern Dean and assarting continued to erode the remaining woodland (above). Records show only 352 royal gifts of trees during the century, though timber for mines was supplied and rods continued to be made available for fisheries - at a rate of two loads daily from September to May in 1336 plus timber 'after torrents' (*Cl.Rolls*.1335-7: 577). Sales were chiefly of underwood, but by 1369 demand fell: 200 acres at Lydney were unsaleable (Hart, 1966:64). This did not appear to increase availability for local use. Following destruction of the Awre bakery by fire in 1372 it took two years for restoration to begin (Stokes, 1914: 167). Local supplies could, however, dispense with the need for imported fuel for charcoal (ch.6); small areas in Mailscot, Ruardean and Bicknor were charcoaled and Chestnuts Wood was cleared in 1326, but subsequently hedged and ditched to allow regeneration. By 1350 parcels were to be felled in Dean on a seven year rotation, and even burnt wood (the result of forest fires) had been sold in 1326 (Hart, 1966:61-3).

Specific locations for charcoal production may be adduced from derivations of the word *cole* - (charcoal was wood cole). It can be found at Kidnall Collet (Staunton bailiwick), Collafield, near Littledean, and a group of five linked underwoods called 'the Collets' around Great Bradley (Blakeney) in the 'Taverner's Survey' 1565 (Hart, 1966:273) - charcoal hearths have been investigated in this area (Johns, 1997: 41-46). Collafield (near Cinderford) or Coleway (near Coleford) are both near iron-working areas. 'Coleway' was also the name of a medieval road running from Clearwell to Coleford, perhaps named from use of its trenches. Trenches were clearings alongside roads, initially involving standard trees such as the 12 miles of clearance (at a depth of six perches) from Newnham to Monmouth in 1255 (*Cl.Rolls*, 1247-58:435). They were regularly maintained during the thirteenth century to ensure an open landscape for the deer (Hart, 1966:64). Such clearance skills were used to support military

campaigns; on one occasion a contingent of 100 woodcutters was sent (with picks and axes) to clear passes in Wales during the thirteenth century (Hart, 1966:50-51). In the Dean some cleared areas were appropriated for purpestures (illegal structures) creating ribbon development. The majority of extant fourteenth and fifteenth century wills cite the King's highway as one of their boundaries (GRO D 2244).

Forest Bounds and Banks

Roads and streams, together with named trees were used to define the boundaries of both bailiwicks and small individual areas of woodland - 'the fence' near Bigsweir (PRO.MR 879) retains its sixteenth century name today. To the northwest of Dean an eighteenth century illustration of Lea Bailey suggests the form which these woods may have taken during the medieval period (PRO MR F17). Its woodland (which encompassed Wigpool iron resource) was bounded by both bank and mere ditch (named) and was crossed by two tracks which intersected at a named oak - the Stenipiece Oak - with a 'bailey gate' shown at the southern end of one track. In 1777 it was separated from the main woodland by an area of purlieu.

Similar written descriptions are given for bailiwick boundaries in 1282. There are several references to 'by the ditch of' in the bounds of Blaise (Hart, 1987:29-30). Hart appears to translate 'dyke' or 'dic' as ditch, although, as in Offa's dyke, it could equally mean a bank. The spoil from digging a ditch would naturally form a bank of some kind, but it does not necessarily imply that this material was purposefully shaped, managed or maintained. 'Ditches' are recorded as surrounding ridings, but would not be effective in barring animals to allow regeneration; at Littledean a 'Northlepegate' occurs between sections of 'ditch' (Hart, 1987:42-3). It suggests that a leapgate (necessitating a bank) is being described.In 1333 Flaxley Abbey constructed a ditch, mound and hedge, costing six pounds twelve shillings and one and a half pence, between arable land and the wood of Chestnuts (Hart, 1966:62). Place names - Fuliatt and Gauliatt - suggest gates into Flaxley Wood (Elrington and Herbert, 1972: 26-7). It would suggest that individual woods were being enclosed with earthworks and that care should be taken in interpreting the word 'ditch'. 'Walle(s)' is equally problematical. The word, frequently used in bounds, is interpreted as 'well' by Hart. While there were undoubtedly wells within the forest (Walters, 1928: 136-140), known well sites, such as St. Margaret's or St. Antony's

wells were described, not as wells, but as Stowe or Merestow in 1282. Hart interprets Pile (or pale) walle as 'swift stream' and yet both hamlet of Pilewall (Pillowell) and the Palewall brook lie along the bounds of Lydney Park and would seem to describe the appropriate earthworks. Use of the word 'walle' may, therefore, in some cases refer to banks, not wells.

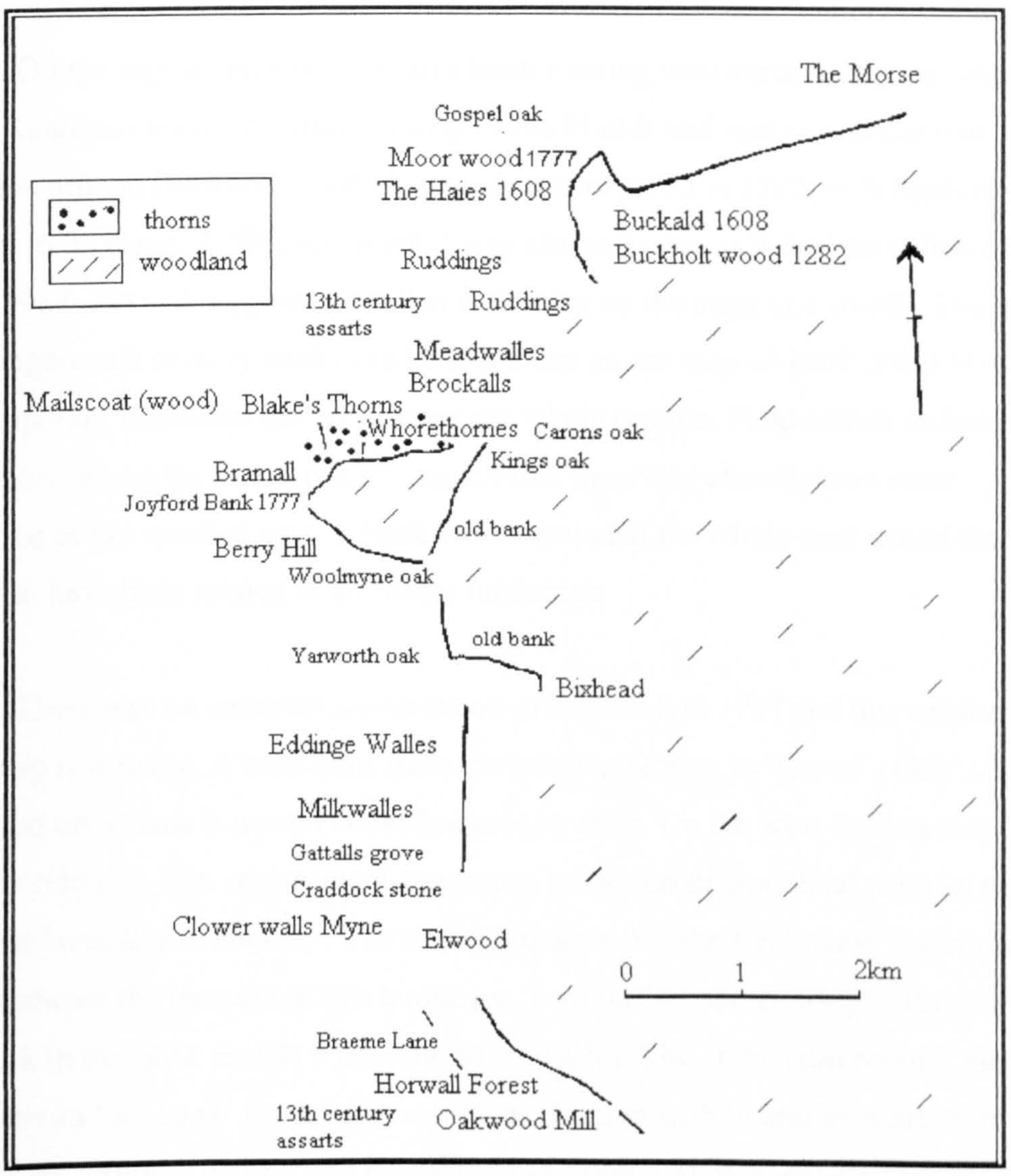


Fig. 44 'Old banks' and associated place-names along the western borders of the Dean woodlands. after PRO MR 879 and PRO MR F17

Ian Standing has observed that there was no boundary bank to the Forest (1997:n.p). However if the location of parks and haies are noted, together with place-names denoting boundaries, such as *mere, edge, end, eave, breme or wall,* a pattern can be observed which could represent a physical expression of such a boundary (fig.44). 'Thorns' may also denote banks; the species was often planted on the top of

banks around copses as a barrier against animals (PRO E 146/1/28). 'Old banks' illustrated on PRO MR F17 are dismissed as post-medieval by Standing (1997: n.p.), and some do relate to areas 'recently enclosed' in a woodland survey of 1787 (Hart, 1966:308-311). This does not exclude the possibility of re-use of former features; re-enclosure of Whitemead Park was proposed in 1662 - both ditch/hedge and wall were suggested methods (Hart, 1966:287).

On the eighteenth century map a bank running westwards along the ridge above Ruardean avoids the iron working of the Pludds and makes a distinctive diversion around Buckholt wood; the wood was recorded in 1282, with hunting implied in its name. A 'Bremleyswalle' was also recorded at Ruardean bailiwick (Hart, 1987: 38) and suggests a 'wall at a clearing on the edge of a wood'. The outline of the eighteenth century banks can be identified on the map of 1608 (PRO MR 879). Contemporary woodland did not occupy the whole outline. Field names including the word 'haie' along the western edge suggest that there had already been some retraction of the wooded area. A bank which included the whole area would therefore appear to have been related to an earlier landscape.

There was no southern continuation of this bank in 1787 and this section of the 1608 map is missing. A track runs from the missing section to 'Caron's Oak' (fig.44); woodland on its east is named Great Buckold in 1608. On the west field names include 'ridding'. The arrangement suggests a retraction of woodland from an earlier manorial boundary of Bicknor. The author suggests that the field name 'horemores' might indicate the location of this boundary. Two further names suggest the presence of a bank in this area: Brock(w)alls and Meadwalles. The eighteenth century map illustrates an 'old bank' south of Caron's Oak, linking with boundary markers of King's Oak, Woolmyne Oak and extending to a point east of Yarworth Oak. A similar sequence of oaks is recorded as marking the boundary of the thirteenth century (extended) Forest from Walford to Newent (Hart, 1987:62).

West of King's Oak the 1608 woodland is bordered by an area called Whorethorns which extends up to 'Bramall'(Breme wall?) next to Laymore. Areas outside the 'Thorns' at Bicknor correspond to documentary evidence for substantial clearances between East Bach and Symond's Yat in 1256 (*Cl.Rolls*). By 1777

Drybrook wall (Bramall) marked the line of the 1608 track from Coleford to Bicknor which separated Mailscot from the rest of the king's hunting area. 'Les dikes in Mayleskoyt' were recorded in 1279 (Smith, 1965:210). Yarworth Oak south of the woodland, suggests a former boundary along a track which extended into the woods at Bixhead. Several tracks converged with this track at the Woolmyn Oak in1608, forming a single track to cross the interface of fields and woodland. Such points exhibit the funnelling out of the woodland described by Rackham as typical of forest landscapes (Rackham, 1989). Although the Bixhead inroad seems related to use of the medieval stone quarry, it enabled access from the Coleford area to the central launds of the Forest at Cannop (fig.42). These launds (pastureland) were to be enclosed 'as shall seem most fit for the profit of the king' in 1282 (Hart, 1987:19). The extant open field (laund) within woodland at Whitemead Park gives some idea of its medieval predecessor. Such enclosures resulted from 'overburdening' of the pasture during the thirteenth century (Hart, 1966: 38). It would seem a strange policy to impose internal barriers to protect the woodland pasture with no corresponding outer barriers to the forest.

A bank representing such a boundary resumes south of the Bixhead turn, running to the Craddock Stone (SO 587 080) - a stone replacement for a 'Gnarled Oak'. Again it is bounded by 'wall'names: (R)Edding Walles (indicating clearance), Milkwalles and Clower Walles with Gattals Grove suggesting an entrance in its prefix; extant remains of a stone boundary marker survive in this area (SO 575 081). The bank bounded Coverham woodland (the King's hunting area) in the 1608 map. No bank is indicated in the Elwood area (a thirteenth century assart by Newland in an area of scowles) - a breach in the bank would suggest a pre-existing structure and a bank is likely because of the proximity of Noxon Park.

In 1608 Noxon was bounded to west and east by boundary names -Whoreland and Horwalls. A bank, illustrated in 1777, runs east to Oakwood Mill, Breme. An extant bank runs from Bream towards Brockhollands where it would have met the bounds of Lydney Park. The park is described as running towards Yorkley and Hayes Wood near Blakeney (GRO D3921/1/41). Coppices (necessitating boundaries) are recorded for the area between Blakeney and Bradley Hill (above). Banks were illustrated in 1787 running along the hillcrest above Bradley Hill through Staple Edge

to Soudley. Soudley marked the southern termination of Abbot's Wood, which is known to have been embanked because of its coppicing cycle - some traces of internal divisions remain as low banks. It was only one of a number of individually-named woods along this northern border of Dean. In 1777 an old 'wall' runs across Edge Hill to the north and another surrounds Haieswood near Cinderford and up to Ruardean. The different terminology may suggest that they are of a different period from the 'old banks'. Haieswood existed (as Eywood) in 1282 (Hart, 1987).

The evidence suggests that, although somewhat piecemeal in form, it is possible to identify a 'boundary' around the forest which would have been in existence by the end of the thirteenth century, a century when pressure on the woodland resources was at its greatest. There is no evidence for the massive woodbanks described by Rackham (1986), but these would seem, by their size, to symbolise status and a static landscape. Although the proposed banks are all located in prominent elevated positions, a low mound with hedges would seem more appropriate to the dynamic landscape of Dean. The hedging would have added to the available woodland resources. In the later medieval period this central woodland appears to have been maintained intact, but in Tavernor's Survey (1565) it is described mainly as consisting of oak and beech of great age, but with shredding commonplace (Hart, 1966:273) - its 9,980 acres of woodland comprised only 0.2% of contemporary Crown forest (Hart, 1966:78).

During the fourteenth century, although vert and venison were retained by the Crown, other forest issues had been farmed out to the Warden. Verderers (forest officials) had formerly met in the woodlands- an inquiry was held 'at the fifth oak' in 1290 (Madge, 1903:153) - possibly near the central Wolfyng Oak. A lodge at Kensley provided a more formal arrangement and became their meeting-house (later Speech House) (Hart, 1966:53). The verderers' court is still held there today.

Conclusion

A vigorous and widespread Roman iron industry would have used vast amounts of timber for fuel. With a diminishing resource coppicing was used to provide a sustainable supply. The demands of a minimal industry by the end of the Roman period should have allowed regeneration, particularly in the central areas of the later

Forest, away from the largely peripheral settlements. Widespread post-Roman woodland appears to be confirmed by Anglo Saxon place-name distribution. Woodland would have provided estovers and pasturage to support local communities. Place-name and documentary evidence also suggests that hunting was widely established before Domesday, associated with royal estates and monastic holdings. Apparently non-productive Domesday manors in the west, together with low population density, allowed the establishment of a Norman forest along the Wye and the central highland of Dean, consolidating and extending earlier hunting practices. Security may also have been a factor to provide a resource for patronage which would support the regime in the politically unstable border lands.

Institution of castles in peripheral areas would have begun a process of tree removal, to provide timber for their construction and repair; the location of St. Briavels within the forest would suggest substantial local clearance during the twelfth century. Establishment of monastic houses and expansion of existing ones would also have required substantial timber for construction, and their agricultural regimes promoted progressive assarting. Areas to both north and south of the Domesday forest were cleared and began a separation of the central woodlands of the forest from other contemporary woodland in the twelfth century.

A resurgent iron industry associated with both Crown and monastic houses required substantial timber for processing. By the thirteenth century this was accompanied by problems of increasing population (with agricultural and pasturage needs), provision for repair and refurbishment of an expanding fishing industry, continued patronage in the form of gifts of timber to local barons and religious houses, together with possible shipbuilding and a commercial wood trade to provide funding for the Crown through sales of timber. The industrialized western margins of the Forest in particular were using wood for industrial fuel at a rate faster than it could be replaced, though there was also aggressive consumption by Flaxley Abbey. Restrictions to use of underwood, dead wood and strippings to provide fuel was insufficient, and by the later part of the thirteenth century large numbers of mature oaks and beeches were themselves being destroyed. Mining in the eastern sectors of the Domesday forest together with its infrastructure and housing would seem responsible for a gradual northern movement of the deer herds.

Hunting of venison had increased during the thirteenth century, with the Crown reserving the original Forest area. During this century the bounds of the Forest had gradually extended - to a maximum by the 1280s. By imposing forest law over this enlarged area the Crown not only acquired a greater resource for its own use but was able to redistribute hunting rights and enhance the status of surrounding landowners. A ring of parks and chases lay along the new Forest boundaries within the formerly non-forest wood pasture; the onus for costs was placed on the landowner. Contemporary expansion of the estates of these peripheral landowners was directed outwards, such as the Talbot estate whose lands skirted the northwestern edge of the Forest from Linton round into Goodrich.

Within the Forest area controls were adopted to preserve the hunting grounds by restricting use of the woodlands to particular areas; monasteries were designated specific woods which they were to coppice, fenced launds provided restricted grazing, and iron production was discouraged through lowered prices for the product in areas of excessive tree damage (ch. 7). The contemporary requirement for agricultural land was also producing widespread assarting. The numerous and random place-names throughout the records suggest a haphazard, illegal, uncontrolled activity. However, analysis identifies that together they form discrete areas, and ones which would have produced minimal damage to the overall economy. This suggests the application of an underlying policy, re-instating woodland of assarts which did not conform, but profiting from those which did.

It is in such a climate that the author proposes that the remaining central woodland of the Domesday Forest would have had limits defined by banks by the fourteenth century. This would have been particularly necessary in Staunton bailiwick where assarts were eroding woodland adjacent to Coverham and Mailscot in which the main hunting grounds now lay. Banks along this western edge of the forest could have linked to existing structures, such as park walls, to create an effective barrier against illegal use or further erosion of the woodland. Field names along the proposed boundary of the forest, such as Shapridge and Staple Edge, suggest a further problem which may have necessitated compartmentalization of activities - the rise of the sheep industry during the thirteenth century. It may also have been necessary to protect

surrounding agricultural areas from hunting damage in the face of increased demand for food by rising populations. A secured central woodland could have allowed the permission for systematic removal of the individual woods which comprised the peripheral woodland, to provide agricultural land.

The change to an agricultural landscape, accompanied by diminishing status of forests and a reduced demand for woodland resources by the end of the century would also have allowed reduction in the afforested area to the central woodland core. Local timber from the purlieus and coppices appears sufficient to supply the needs of the reduced iron industry. The central forest was preserved, rather than managed, and by the sixteenth century its stock was old and decaying, with value primarily in its underwood. Post- medieval requirements for ships in Elizabethan England could not be met from the forest without substantial investment in new stock. Adoption of this policy, together with perpetual rights given to the forest inhabitants (ch.6), and the economic value of the area's coal and iron reserves mitigated in favour of retention of the forest in Crown hands. The grazing, mining and timber rights have continued from their medieval origins into modern times - with local inhabitants rigorously campaigning against any changes to their heritage of Royal Forest.

CHAPTER 6: IRON AND ITS ASSOCIATED INDUSTRIES

Introduction

The Forest of Dean did not develop into a major industrial area such as Ironbridge or the Midlands in spite of substantial reserves of iron, and a long duration of mineral exploitation dating from before the Roman period. There would seem to be some factors relating to local geology, extraction or processing which determined a different pattern for the Dean industry. It may be possible to identify such factors by study of the location, distribution and topography of relevant sites, the physical properties of the ore deposits or contemporary documentation. The author did not attempt any work underground. Her investigation was based on surface observations, together with analysis and synthesis of the wide range of reports available on individual local sites: Walters (1999), Webb (1988, 1992), Bick (1987,1990), Standing (1988), Hart (1944,1971,1983,2001), Wildgoose (1988,1993) and Fulford and Allen (1992). Comparisons with other iron-producing areas are also included in the study to try to isolate the factors which typified Dean methodology. These areas were chosen because their iron industry was contemporary with that of Dean, there was geographical proximity to Dean, or an apparent similarity in industrial organisation. They consist of: the (Roman) Weald of Kent (Cleere and Crossley, 1985), the Welsh Industry (Smith, 1977), the Roman West Midlands and the Forest of Dean (Scrufer-Kolb unpublished) and the monastic industries at Bordesley Abbey (Astill, 1993) and Rievaulx Abbey (McDonnell, unpublished). Greater comparison, in this dissertation, is made with the Weald, an area in which comprehensive research has been carried out.

Geology

The iron resource of the Forest of Dean lies chiefly in its carboniferous limestones which lie in an anticline encompassing the central area of the modern Forest of Dean - the Hundred of St. Briavels. Ore outcrops along the northern and southern perimeters as two separate narrow bands, diminishing in depth on the western margins (fig.45a). The northern one runs for eight kilometres from Wigpool common, northwest of Mitcheldean, to Soudley, the southern runs from Lydney through Bream, Noxon, Clearwell and Perrygrove (Coleford) to Staunton. Two smaller areas of ore occur at Hangerbury (Lydbrook) and Drybrook, with other isolated amounts scattered among

the coal measures which cover the central area of Dean (Dreghorn, 1968). Localised deposits of iron ore also occur to the north of the Forest; a band of mineral-bearing rock lies around Newent and stretches up through Aston Ingham and Dymock towards the Herefordshire mineral deposits (Bick, 1990: 39).

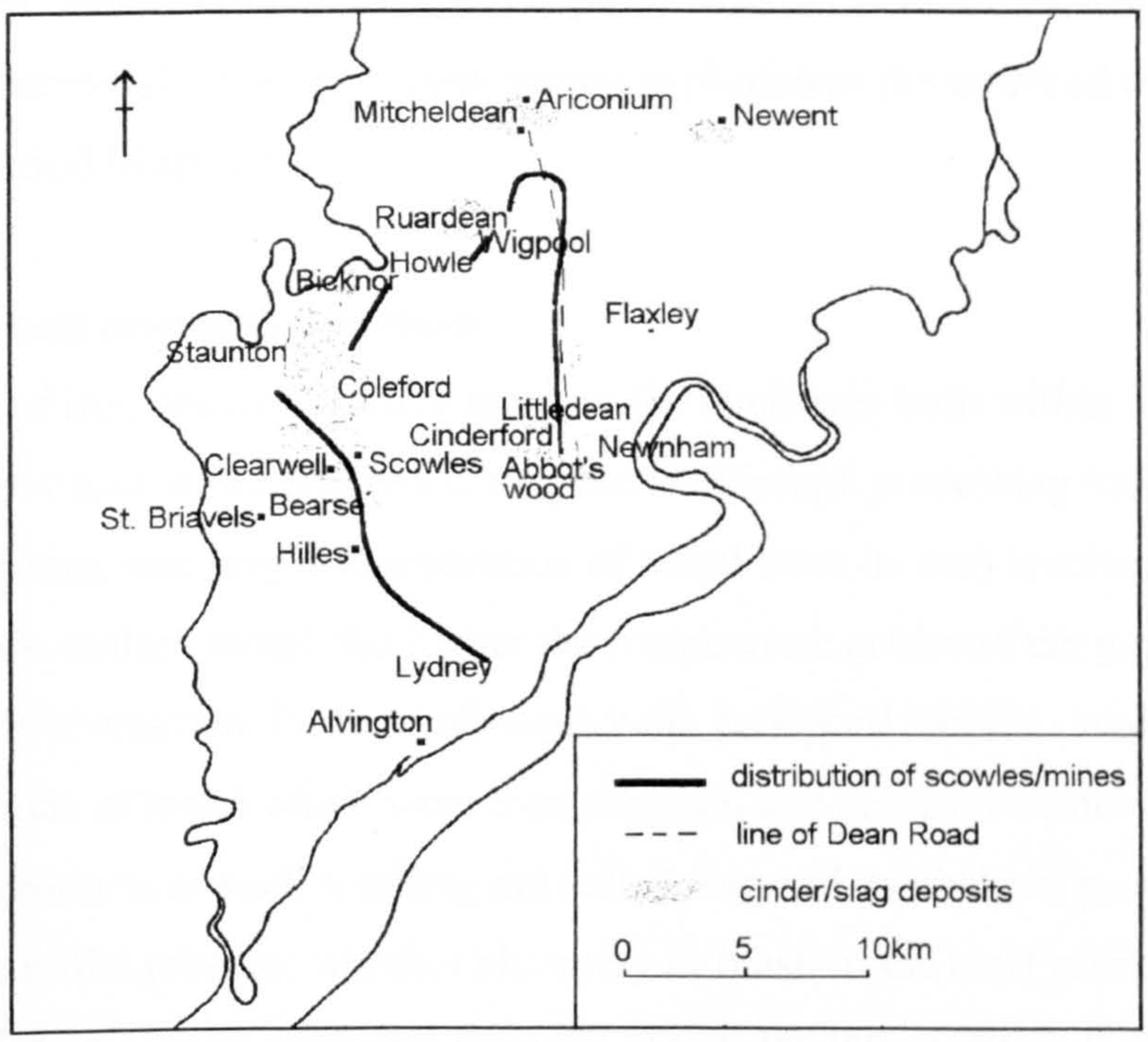


Fig. 45a Distribution of ore seams and waste deposits.

The Forest ores are chiefly haematite, occurring in various forms ranging from hard 'flint' ores to stalactitic, easily dug ores. Goethite, one of the limonite group, is a common variety, identified as fibrous and crystalline. Powdery brushwood ore is the easiest to obtain because of its physical properties. Once a seam is found it is possible to simply make a hole and the material flows out like water to be collected in receptacles (Wright,J. pers. comm.). In contrast to the clay iron-stones of the Weald (Cleere and Crossley, 1985:9), Dean ores have a high metal to ore ratio and are low in impurities such as phosphorus or sulphur which inhibit processing (Fulford and Allen, 1992:186-188). This gives a potentially high yield from the ore: 50-70% yield from haematite and 40-62% iron from the stalactitic variety.

A further type of ore, bog ore, occurs in Gwent, to the west of the Dean (Walters, 1999: 29) and is likely to have been present in northern Dean. It was found in Herefordshire in the last century and recorded by the Woolhope Field Club, though

the specific reference has now been lost (Bick, 1990: 42). Bog ore occurs in the swamps of low-lying areas: such surface deposits would have been easy to obtain, but have left no trace in the archaeological record. This type of ore has been worked in the old red sandstones of Pembrokeshire (Claughton, 1989: 2-3) and Western Wales (Smith, 1995: 246-90). Silver and gold deposits also occur in the Newent region with several unsuccessful attempts at commercial exploitation documented during the post medieval period (Hart, 1944).

Extraction and processing methods

Excavation of iron ore would leave scars on the landscape both within the matrix and through deposits of waste and processing sites. Although processing methods have varied over time, smelting (the separation of metal from its ore) involves heating the ore to remove molten metal; the higher the temperature achieved the greater percentage of extraction. Early small-scale work produced blooms - malleable agglomerations of metal which were then reheated and beaten to remove impurities. The waste products of such smelting are called slag and its physical properties can indicate the initial process; whether bloomery or blast. In the blast process greater amounts of metal can be extracted from the ore, as the introduction of draughts of air raises the temperature in the furnace; its slag will consequently be lighter and less dense. Up till now it was thought that the blast process came into use at the end of the medieval period, but archaeological investigation is beginning to suggest an intermediate stage of technology in Britain. 'High bloomery technology (stuckoven)' is found in Europe and could be considered as proto-blast furnaces (McDonnell, unpublished). Evidence from Rievaulx Abbey suggests that such technological development can be found in the monastic context of North Yorkshire, though precise dating is not yet available (McDonnell, unpublished).

Even after the introduction of blast technology in the late sixteenth century charcoal was used for fuel. Apart from this role in smelting, charcoal was also used in the manufacturing or smithing processes in which metal was fashioned into artefacts (ch.5). Coal has occasionally been associated with processing, but, to date, it has only been found at smithing sites in England, such as Park Farm villa, Lydney (Fitchett, 1986:24-7). Wind or water-power could also be involved: to drive bellows to produce a draught or to power hammers. The industry can therefore be archaeologically

identified through a variety of indicators: extraction sites, ore crushing, washing and roasting sites, charcoal burning hearths, smelting furnaces, forges, waste products, purified metal, tools, manufactured artefacts and the infrastructure for dispersal.

Extraction sites

Extraction of ore from surface outcrops produces a landscape scarred by hollows and cavities. Hollows may subsequently be filled in, particularly if further mining takes place in the vicinity; they provide a convenient place to dump spoil. Such infill took place in the Weald of Kent where mineshafts were filled from new pits during the Roman period; the modern landscape has a 'dimpled' surface from subsequent settlement of the material (Cleere and Crossley, 1985:17). Infilling does not seem to have formed part of the Dean methodology.

In Dean extant hollows are described as 'scowles', a locally restricted word which appears to be a corruption of the British word for cave (Nicholls, 1866: 4). The landscape of scowles is distinctive; 'with the exception of a few broadly similar features in Lancashire and South Wales scowles are unique to the Forest of Dean' (Hoyle, 2001:207). The irregular, sprawling shapes of these 'gashes in the land surface' contrast with the rounded bowl-shaped pits found in the Weald. Dean's scowles were scheduled as an ancient monument in October 2000 in recognition of their national importance. Although it is a generic term it is specifically used as a place-name in Bream Scowles (SO 607 045) and the hamlet of Scowles (Greenhaye Scowles, 1608, PRO MR 387). At Lydney such mines run up to the Iron Age promontory fort, later used for the Roman temple complex (Wheeler, 1932). This geographical association and the survival of the unique and obsolete name for the Dean mines would suggest that those mines referred to as scowles had origins which pre-dated the Roman period. Roman coins found in the vicinity of both these scowles (Walters, 1999:23 &105) suggest that their use continued into the Roman period. Such artefacts have been found in association with all the other major outcrops of Dean and have been used to date their use (Walters, 1999:1-28). The evidence suggests widespread use of the iron resource during the Roman period. In the Weald archaeological evidence currently identifies prehistoric extraction as concentrated in two areas (north and south of the High Weald), with workings spreading

progressively inland from the coast during the Roman period (Cleere and Crossley, 1985: 53-57)

In Dean ore was also extracted from the Iron Age to the post-medieval period (Nicholls, 1866:27-82). A hole is merely the end product of mineral extraction which may have taken place on any number of occasions and whose visible dimensions may have increased or decreased over time. The presence of Roman material does not exclude the possibility of later extension to an earlier working. The linear shapes of many of the extraction sites noted by Wildgoose (1993) would lend themselves to such a model. It would seem more cost-effective to utilise surface extraction, following the seams where they were easily available, before initiating underground workings. Mineral extraction via shafts would have needed investment in ladders, scaffolding or timber props to effect access, and retrieval of ore would take longer. The saucer- shape of the Dean mineral deposits also produces problems of drainage in deeper workings.

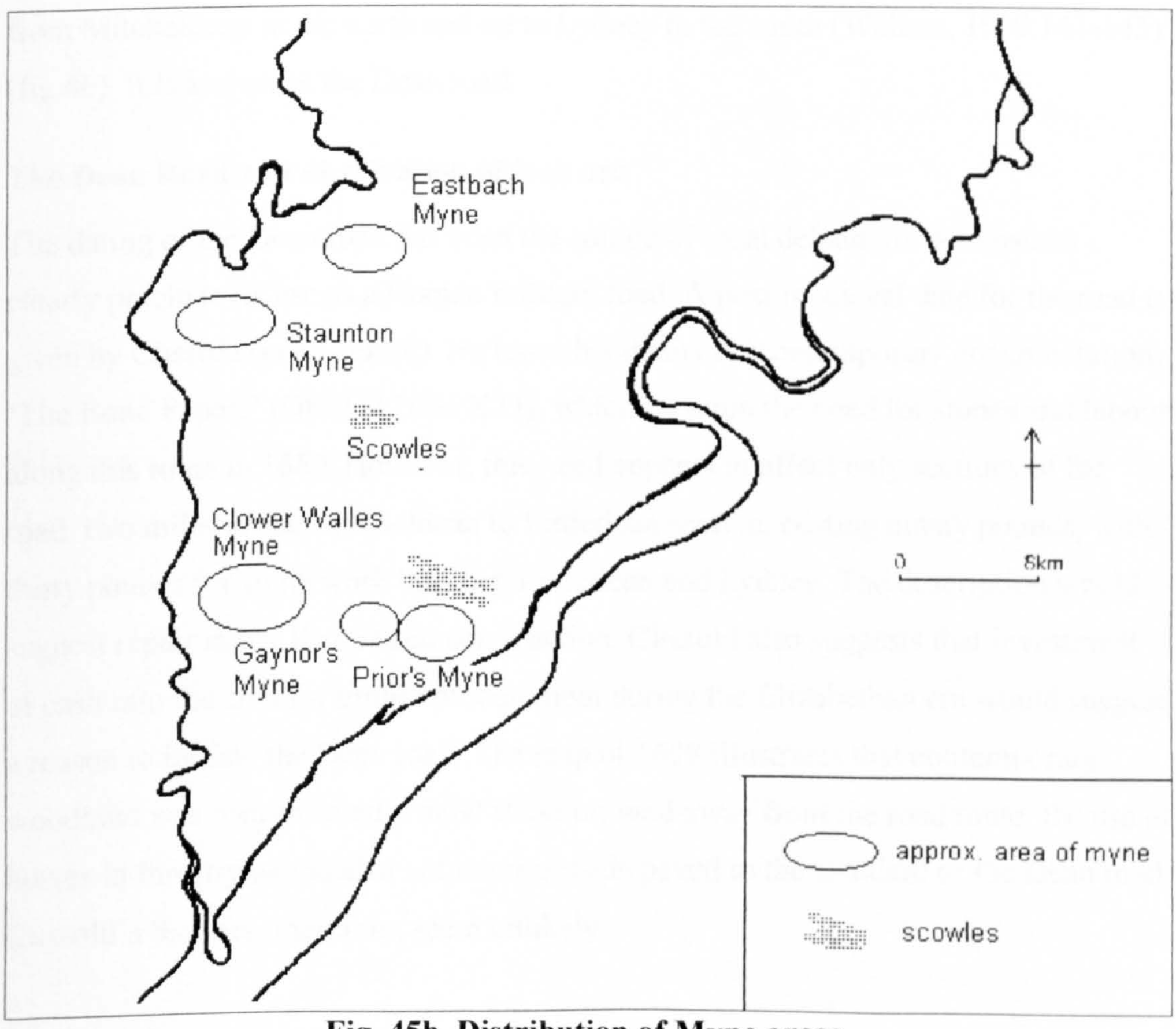


Fig. 45b Distribution of Myne areas.

The Anglo-Saxon word 'meand' or 'myne' (iron-ore), rather than 'scowles' describes certain areas of outcrops (Nicholls, 1866: 4). The application of this word may suggest that it was applied in association with contemporary use of the resource: notably East Beach (Eastbach) Myne, Staunton's Myne with adjacent Myne Hill, St Breulles (St. Briavels) Myne, Prior's Myne and Gaynor's Myne, New Tinede Myne and Breame Myne. (PRO MR 879). All are located on the south and west of the Forest, linked to St. Briavels (fig.45b). The names would suggest the designation of particular areas to either manors or individuals, in contrast to the extensive, but un-named scowles extant on the king's land, such as at Noxon.

Un-named scowles may also indicate abandoned Roman workings, notably those in the north and northwest of the Dean. Wigpool Common, the Delves, the Wilderness suggest areas which were abandoned or inactive when these names were applied. They refer to an area of extensive scowles, stretching from Mitcheldean down to Soudley. A cobbled road (c. 2.5m wide) runs the length of these scowles from Mitcheldean in the north and on to Lydney in the south (Walters, 1999:141-143) (fig.46). It is known as the Dean road.

The Dean Road and distribution of iron ore

The dating of the Dean road has been the source of local debate. Its dimensions clearly preclude its use as a Roman military road. A post-medieval date for the road is given by Clissold (pers. comm). He bases his theory on contemporary documentation, 'The Bond Papers' (GRO D 2026 X23), which mention the need for stones and labour along this route in 1680. However, this need appears to affect only sections of the road: two miles of the Mitcheldean to Littledean section, costing ninety pounds, with thirty pounds for some work between Littledean and Lydney. The description would suggest repair rather than initial construction. Clissold also suggests that investment of cash into the area for timber procurement during the Elizabethan era would suggest a reason to initiate the Dean road. The map of 1608 illustrates that contemporary woodland was concentrated around Bicknor, well away from the road route; the use of horses in forestry would also not require roads paved to the standard of the Dean road. Clissold's theories, therefore, seem unlikely.

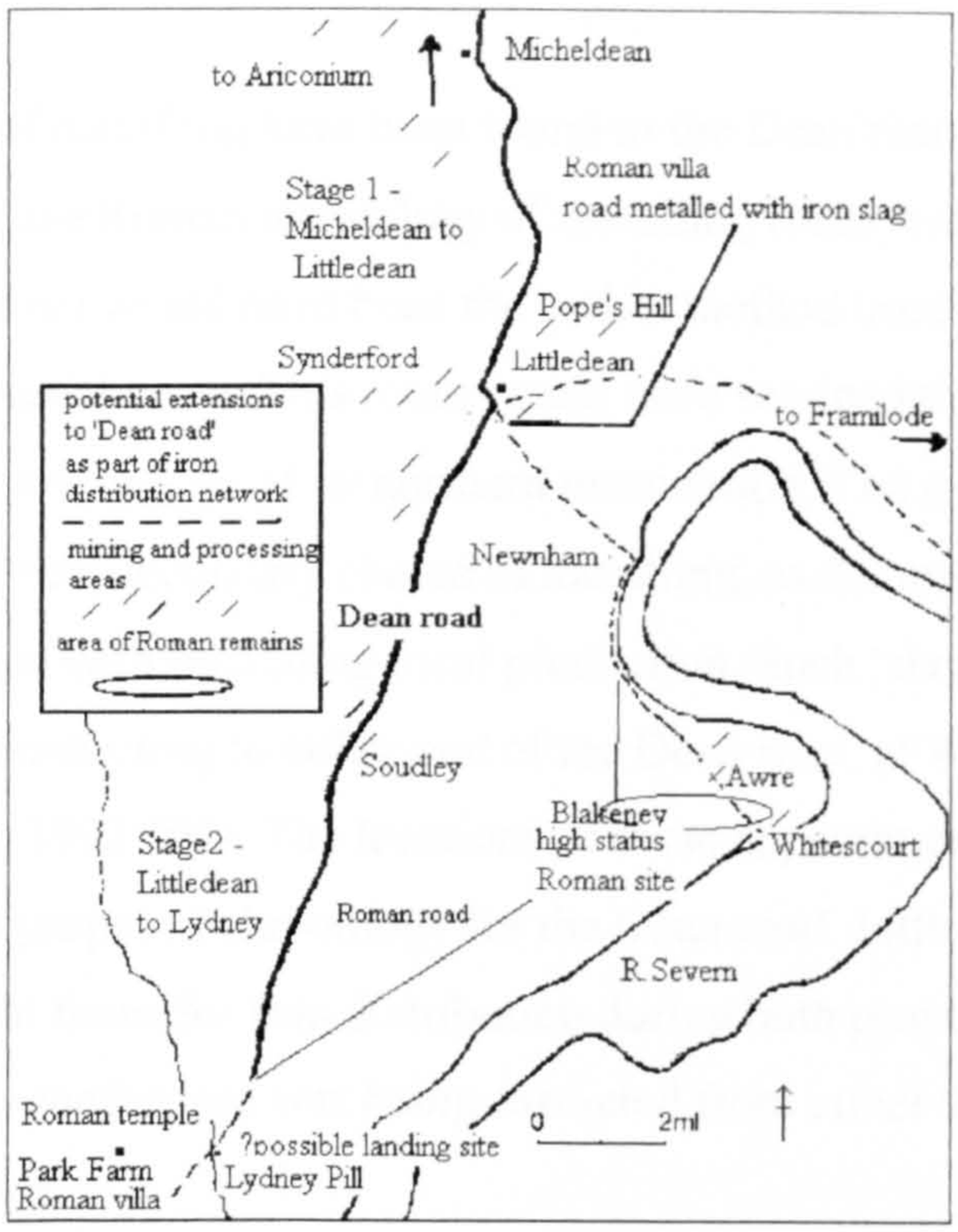


Fig. 46 Relationship of 'Dean road' to the iron mines, waste deposits and villas.

Repair during the medieval period, may be a factor overlooked in Standing's assessment of the road as a late-medieval construction. His hypothesis was based on carbon-dating of charcoal found under the edge of some paving (Standing, 1988: 35-43). Standing also cites a detour around the medieval church at Littledean as suggesting that the building was in existence prior to construction of the road. Security of context for the charcoal has been questioned (Walters, 1992:68), and longevity of use may have diverted an original course over time so that it now appears to make the detour (below). The author suggests that the road (or simply its paving) may originally have terminated at Littledean (adjacent to the Roman villa) and led to the river at Newnham or Awre; a later extension to Lydney could have resulted in an odd alignment at the junction of the routes. The proposed extension follows outcrops of ore with scowles and associated Roman coins for almost five kilometres in Ruspidge parish (Walters, 1999:19). Other coin finds along the length of the Dean road suggests Roman usage. Walters notes that the route links four Iron Age sites: Lydney, Soudley, Welshbury and Chase Hill and he therefore suggests that there was Roman upgrading of existing routes to facilitate the passage of heavy goods (Walters, 1999: 141).

Two forms of metalling have been found in the Dean road; stone and slag. The author suggests that the Roman technology of metalling roads with stone (used throughout the Empire) would have been the earlier method used in Dean, to create a main north/south arterial route. This route would have serviced the major iron-processing area of 'Ariconium' at its northern termination. The use of waste products from forging would be a secondary choice of metalling, as the material increased in availability in tandem with escalating local production. Such 'slag' surfaces have been identified in roads connecting to either end of the Dean road, at Wigpool and Littledean (Walters, 1992:107). The locations of these apparent extensions might seem to support the proposed chronology for the Dean road. Littledean appears to have been a potential focus for iron distribution during both proposed phases of Roman production, whether ore was being extracted from either the northern or southern ore resources.

The existence of routes dedicated to the iron industry would be compatible with the model proposed for the Weald. Cleere and Crossley assert that all Roman iron-working sites lie within 3.5km of a known Roman road, either as major arterial roads, or minor ones and ridgeways (1985: 60). These routes can be classified in relation to communications by both land (a north/south route from the western Weald), and sea (the eastern Weald), and the possible markets for which products were intended (Cleere and Crossley, 1985: 60-61).

Ore can be identified to its source by its physical and chemical composition. Analysis of ore from archaeological sites around the Severn Valley has identified a wide contemporary distribution of Dean ore reaching as far inland as Worcester (Allen & Fulford, 1987: 279), using the Severn as a highway. A route from the Dean valley (and Dean road) through the Elton valley would have led to Westbury and the Framilode passage across the Severn (ch.3). Dean ore has been found at Romano-British sites on the eastern shore, accessible from this passage (Allen and Fulford, 1990: 322) and at villas there such as Chedworth and Frocester (Walters, 1999:128). A route across the Forest from Westbury through Littledean and Cinderford towards Coleford is clearly marked on the Elizabethan map (PRO MR 397) and could also have linked the western Dean into a cross-river route.

The northern focus of the iron industry at Weston-under-Penyard appears to have been largely abandoned after the second century (Walters, 1999:78). This mirrors the pattern of a diminishing iron industry in the Weald (Cleere and Crossley, 1985: 60); it may result from a slump in military needs after consolidation of the new regime. The scale of production may also have depleted the surface ore beds by this time. Abandonment would support the early medieval topographical place-names, such as Wilderness (above) and have implications for the nature of the later, medieval industry, in terms of availability of the remaining, deeper, ore deposits and the necessary extraction methods.

During the first two centuries of Roman occupation, smelting sites, but not smithing, have been attested archaeologically, by pottery or coins at: Howle Hill, Drybrook, Aston Ingham, Symond's Yat, Ruardean and Lydbrook (Walters, 1992). All the sites are marginal to the ore deposits, with a geographical bias towards northern Dean and most appear to have had earlier occupation. No towns were established in Dean, matching the peripheral settlement pattern in the Weald noted in 1985 (Cleere and Crossley, 1985: 69). Diversity of style and scale of the Dean sites suggest individual, perhaps hierarchical, enterprises which served distant manufacturing centres- a model suggested for the West Midlands (Scrufer-Kolb unpublished). Organisation of the Dean industry does not appear to have marked differences from either of these two areas. There may, however, have been differences in the overall control of the working sites. In the Iron Age there is a marked difference in hillfort density between the iron producing areas. An average of 4.8 hillforts per 100 sq miles in the Dean area compares to only 0.39 in the Weald and a similar low density in the Midlands (Forde-Johnstone, 1976: 269).

Archaeological evidence of a prehistoric style of furnace (bowl type) at both Awre and Chesters Roman villa (Fulford & Allen, 1992 192-3) suggests a continuity of a more localised industry in tandem with the industrialised sites of the Roman period. During the latter period, slag tapping furnaces provide the bulk of archaeological evidence, both in Dean (Fulford & Allen 1992: 192-3), and the Midlands (Jackson &Ambrose, 1978: 164-5). Neither Chesters nor Awre are located near ore beds and therefore must have acquired the ore through trade - a possible

symbiotic relationship with the industrial settlements - or had their own rights. Chesters is located in modern Alvington, and it was Alvington which had the only recorded iron dues in the Dean in Domesday (Morris, 1982:E8), suggesting a continuity of the industry, presumably related to the Lydney deposits near its hillfort. Again the material would require adequate routes for transportation. Walters' theory of association of the Dean road with the hillforts may support the hypothesis of some local centralisation or elite control over the resource, carried on into the Roman period. Transportation of ore to such centres would have been viable because of the high quality of the ore with little waste to carry; it would also explain the lack of infill of the scowles (there was no material left in the vicinity).

Dean's villa sites represent an extra element in the industry, compared to the socio- economic framework of the West Midland industry, where settlement bases were mainly either rural or suburban (Scrufer-Kolb unpublished). Existence of powerful landowners, as suggested by villa ownership, seems to be the only distinguishing factor between the two areas of similar potential, and suggests continuity with the proposed Iron Age pattern of elite control in Dean. Transition from mixed economy to specialised iron production took place on the rural settlements in the West Midlands. Production there remained on a persistently high level into the third and even fourth centuries, lessening during the Saxon period before regaining an importance into modern times. Divergence from this pattern in the Dean can be seen to begin after the second century when iron production stabilised and then slowed coinciding with expansion of villa culture in the area. Like the Weald (Cleere and Crossley, 1985: 69) Dean villas were peripheral to the mining areas. Riverside locations suggest that their role was that of management, controlling the exportation of iron, identified inland throughout the Severn as far as Worcester. Such a distribution, coupled with a disseminated, privatised industry in a society which lacked cohesive internal organisation may therefore have been a determining factor in directing medieval and later development.

The volume of the early extraction would, however, affect availability for the later, medieval industry. It has been calculated as 600,000 tons of ore from the Wigpool area (Wildgoose, 1988:4-11), but these calculations use only surface measurements and estimations. No statistical relationship exists, however, between

the surface area of a mine and the underground extraction to which it relates, either in volume of material extracted, or the proportion of that material which contained ore. The Dean is riddled with underground workings, many of which either remain unexplored, infilled (either naturally or by man) or blocked by later rock falls (J. Wright, pers. comm). A vast underground lake, formed by water seepage into old workings, was discovered near Bream during road widening in 2000 (SO 598 056) but with no visible exterior indicators. An undated scowle, 60m long was also identified in the vicinity, with two slag-filled pits (Derham, 2001:209). At Edgehills nineteenth century miners, cutting into the hillside, discovered earlier mines which had extracted ore from the surface, reaching levels of three hundred and sixty feet and four hundred feet above OD before being abandoned (Trotter, 1936). Tunnels appeared to follow seams out from the bottom of these scowles: similar tunnels can be found near Lydney's Iron Age hillfort and among the one kilometre of scowles at Noxon.

Estimates vary in the total amount of ore produced from the Dean scowles during the bloomery phase (which included the Iron Age, Roman and medieval periods). Wildgoose (1993) suggests 2,302,078 tonnes of ore which produced 575,000 tonnes of iron. Bick used documentation of later iron production methods, experimental archaeology and extant bloomery processing waste to suggest a minimum of 2,060,000 tonnes producing only 274,000 tonnes (1990). Walters summarises the calculations made by Wildgoose and Bick (Walters, 1999: 94- 99, 127-8) but notes factors which could modify these conclusions: sites remain unexcavated, and unknown amounts have been exported from the Dean area. Further discoveries have also been made since the statistics were compiled (note the discoveries at Bream in 2000, above), It would seem that revised estimates would be potentially far higher. The existing calculations do not differentiate into periods. The number of scowle sites identified as having Roman use currently stands at 25 (Walters, 1999: 31-34). Many others scowles have been obliterated. Only one remains at Drybrook from an original group. Like other undated workings at Staunton these have been filled in, but identified through aerial photography (Walters, 1999: 4 &19).

Identification of Roman workings is made easier in other mining areas, such as the Weald of Kent, because of a close association of ore source, working area and waste products (slag) (Cleere & Crossley, 1985: 73). Slag is ubiquitous in the Dean,

found in walling blocks, land infill, hardcore or isolated scatters: it also formed the foundation of the medieval town walls at Monmouth (Walters, 1999: 98). Provenance is therefore hard to establish, without expensive chemical analysis.

Slag

Differentiation into Roman or medieval bloomery slag rests largely on context and/or associated artefacts. Sometimes the type of furnace may be identified, with 'flow' patterns in the slag suggesting shaft furnaces through which 'tap slag' drained. This is typical of Roman deposits (Walters, 1999:36). Extensive, deep deposits of slag lie beneath Coleford (Standing, 1985, 1987) and Ruardean (Walters, 1999:18)- up to three to four metres deep in places. The existence of medieval houses over these deposits suggests that the majority would be of Roman date. In 1500 these older slags, with residual ore, were being mined between the houses, in one case causing subsidence (GRO D 2957/86(11). Re-use of slag as a resource in its own right can be dated back to the Roman era when it was used as hardcore for metalling roads, such as at Littledean (above)(Walters,B and Walters,M., 1983: 55-59). Improved technology in the medieval period, with higher smelting temperatures (through the use of bellows or tuyeres) also recovered residual ore from the slag.

A medieval recycling industry can be attested back to 1247 when free miners were involved in slag sales (Hart, 1971: 158). In 1276 '£5 15s by sale of cinders (slag)' by Ralph de Sandwich, custodian of St. Briavels was recorded (Inq.15, Ed. III Exchequer records no.75). Reworking of such cinders has taken place on an industrial scale - records of the Foleys (post-medieval iron masters) give a ratio of 3-4 parts cinders to 1 of virgin ore (Bick,1990: 39-42). 'Infinite availability' of Roman cinders, in amounts both above and below ground, was extolled by Yarranton (1677) who noted that they used less charcoal for processing and produced a better result (Nicholls, 1866:48-49). The survival of such quantities, in spite of the medieval reprocessing and a thriving export industry, suggests the magnitude of the original slag deposits. Cinders, destined for Ireland, were being exported through Newnham at such a rate that a prohibition was suggested in 1662 (Nicholls, 1886:47). Large quantities of cinders were being removed from fields called the Correggio, The Limekiln Patch, Long Sevens and Ockwall field at Bicknor in the seventeenth century

(Wyrall, 1778: 225-6). These sites can be identified from the 1608 map (PRO MR 879) to the southwest of Bicknor Court, towards Symond's Yat hillfort.

Extensive bloomery deposits were also found at Cowmeadow Farm to the south of Bicknor Castle (Walters, 1992:98) and on 'Cinder hill', SO 586 147, (Walters, 1999:6). Field names including the word 'cinder' occur throughout the forest, often on a hillside (as at Bicknor, Ruardean and St. Briavels). It would suggest a means of disposal by tipping the waste over the scarp, a practice common to the Weald (Cleere and Crossley (1985:72-73). A Romano-British shaft type furnace and other smelting areas were found in 1987 at Barnfield, in this southern area of English Bicknor, in association with late Iron Age to fourth century finds (Walters, 1999: 5). During the thirteenth century the number of forges recorded for Bicknor are consistently less than other manors: two forges in 1282 in comparison with eight at nearby Ruardean (Hart, 1987: 7). Bicknor's geographical position and the Royal Forest isolated it from any major iron outcrops and its contribution towards the contemporary industry therefore appears to have been primarily in the provision of charcoal for its smelting.

Domesday ownership of Bicknor by the royal hundred of Westbury may have masked records of any contemporary iron working, in similar manner to the lack of data regarding the central (Forest) area of the Dean. The hundred itself had owned Newent prior to the Conquest; fourteen acres of Roman smelting and smithing debris has been identified there (Walters, 1999: 98), although there is no sign of Roman occupation after the early third century. The waste lies in fields called 'cinder pits' on the tithe map (1838). It forms part of an area comprising 117 acres of occupation debris, charcoal, tiles, pottery, re-deposited slag, hardcore and clay pits, at a junction of the Roman road system and near a modern farm called 'Caerwents' (Walters, 1999: 82-84). A more extensive area of waste in conjunction with Iron Age and Roman occupation debris, is located at Weston-under-Penyard (Walters, 1999: 45-50) (Jackson, forthcoming). Iron production appeared to cease after the third century.

Weston-under-Penyard is only three kilometres from Howle hill. The manor, which lies one kilometre south of the Iron Age hillfort, is the only western manor which had any connection with the iron industry at Domesday, when a smith was

recorded (Morris, 1983: 1.60). This single smith contrasts with a concentration of twenty three smiths in Herefordshire in the Domesday records, many clustered around the town itself. Alvington, the only other Dean manor to mention iron, was a detached part of the Herefordshire hundred of Bromsash (Morris, 1982:E8). It recorded twenty blooms as part of its dues. With a location outside the ore deposits Alvington must have had a designated mineral resource, presumably at Lydney as the nearest outcrop. Areas of burning and cinders, which suggest remnants of the industry, straddle the Cone Brook: at Cinder Mead and Upper and Lower Cinder Mead. as well as *Orchard Meadow* (info. Owner) These fields unite Alvington economically to the southern area of Aluredston, ignoring the parish boundary. The manor of Aluredston included the site of the Roman villa of Chesters. This villa lay beside the small stream into Ley Pill. which provided the hundred boundary, bringing the villa into 'Lidenei' hundred.

Of the three Roman villas in this middle estuarine area of Dean it is the two within Lydney hundred that have provided notable evidence for iron working. Smelting and smithing slag was found at Park Farm Villa, Lydney (Fitchet, 1986:24-27) and an ore crushing unit, shaft furnaces and redeposited slag were excavated at Chesters by Fulford from 1998-90 (Walters, 1999: 105). Iron residues found at Boughspring villa (Pullinger, 1990: 12-25) were located in the doorway to the main room and are therefore likely to have been deposited at a later stage - the site was known as the smithy into modern times. Charcoal evidence at Chesters (Fulford et al. 1992: 159-215), Ariconium (Jackson, forthcoming) and Blakeney (Barber & Holbrook, 2000:33-61) demonstrates autumn felling and stockpiling and suggests seasonal smelting. Size and variety of the wood used also suggests that the industry was supported by coppicing in contrast to the use of heartwood elsewhere, such as East Midlands or Devon (Barber & Holbrook, 2000:53). Blakeney, like Chesters lies outside the ore fields; the nearest outcrops are at Soudley some five kilometres away.

The villa sites that have been identified with smelting activity all appear to have been largely abandoned by the fourth century (Walters, 1992:95-98). Late Roman iron working sites appear, on present evidence, to be restricted to two sites at Lydbrook and High Nash (Coleford) and possibly Stock Farm villa, Clearwell (Walters, 1999:113-6). The Lydney temple site may provide evidence for later, post-Roman smithing activity with iron scoriae found in the abandoned mansio (Bathurst,

1879). Smithing is a secondary process in the production of wrought iron, involving reheating and hammering blooms to remove impurities. The western sites all occur in areas of high production during the post-Conquest period, but with no recorded populations at Domesday because of their location in the Royal Forest.

Iron-working settlements

The author suggests that the Lydbrook population may be represented under the Domesday name of Newarne. Its current identification (EPNSiii:218-9) places it at Speech House. Speech House is located near the Newarne Brook, which was illustrated on the 1608 map (PRO MR 879). This would place it within the geographical area of the Royal Forest at Domesday. It is recorded as part of Bromsash hundred, and, with no mention of 'forest', such an identification would be atypical. All the other entries for Gloucestershire holdings in Bromsash are located along, or near the Wye. A recent re-assessment places Newarne north of Speech House, near Mirey Stock, in the watershed of the brook (Hart and Clissold, 2000:17-20). Modern Newerne Brook (sometimes called Cannop Brook) flows from two converging sources each called Newarne (Hart and Clissold, 2000: 19). The author notes that the southern branch could place Newarne near Hangerbury/Worrall Hill, bordering English Bicknor - the site of both the extensive iron working sites and a proposed Roman villa. This proposed location would complete a pattern and mean that each lateral valley into the Wye had a settlement at its head, with access to the riverine resources. The aceramic nature of the Anglo-Saxon period west of the Severn, however, means that any contemporary settlement is hard to identify.

Field names offer the only clues at present. A field name 'Walton' survived in 1608 to the southwest of St. Briavels, on the edge of 'Pitty Marsh Common' (PRO MR 879). Gelling (1978: 93-5) suggests that this name means a settlement of serfs and is associated with low status populations. Faith (1997: 60) suggests that 'walh' had the meaning of slave by the tenth century. Walton may be the location of the three slaves recorded for St. Briavels at Domesday. Their lowly status might mean that they were involved in the local iron industry. The name Wellinton referred to Newland (near Coleford) before the thirteenth century, when assarting of its 'new lands' expanded the settlement and changed its name. Many of the scattered lands of the new parish were concentrated around the Coleford/Clearwell area, the area of concentrated

mining activity. Tithes from Newland's mines were given to Llandaff by 1305 (Fry, 1910: 45-6).

Clearwell was not recorded at Domesday. However, the Anglo-Saxon field name 'edisfield' may indicate a resident population. The name can mean 'pasture' (Bosworth and Toller, 1936:239) or enclosure (Costen.pers.comm.). In 1608 it appears in Alvington parish near the scowles of Gayner's Myne and again to the south of Perrygrove scowles (SO 578 093) and adjacent to the slag deposits of Coleford. The names suggest residual post-Roman populations, like Greenhaye Scowles, located immediately next to the iron mines. At Clearwell, scowles lay to the west of edisfield, in Little Eddies Wood (the name suggesting a link) and south, at Stock Wood (fig.47). Edisfield was also linked, by a track, to the central area of the modern Clearwell - named Carswaie in 1608 and now Stock Farm - the location of a Roman villa (Atkinson, 1986: 28-35). Housing plots are smaller and more scattered in this vicinity, near Clearwell Myne, than those further west, away from the workings.

The name 'Clower Walls' appears after the thirteenth century and has been interpreted as meaning 'Clear Well', after the spring which rises near the modern church. However on the map of 1608 (PRO MR 879) it is clearly 'Clower Walls'. A large area, approximately three kilometres to the northwest, towards Staunton, also uses the same word, 'the Clowers' with 'Clowerwall myne' extending use of the term over some five or six kilometres. As a noun, interpretation as the adjective 'clear' would seem incorrect. Two middle-English words with similar meanings may explain the term: clough, a narrow valley, or clowe, as a derivative of cloven - to cut apart - 'stones ben y hewe and y cloven' (Kurath, 1959: 355, 358 and 323). These would describe the local topography of scowles, with narrow slits excavated into the earth. 'Walls' is a common suffix along the western edge of the forest where former wood banks can be found (ch. 5) or may refer to the banks and mounds caused by the mining spoil.

The layout of Clearwell village suggests a secondary phase of development by extension of an existing settlement. It conforms to a general period of settlement re-planning in the thirteenth century (Faith, 1997:225).

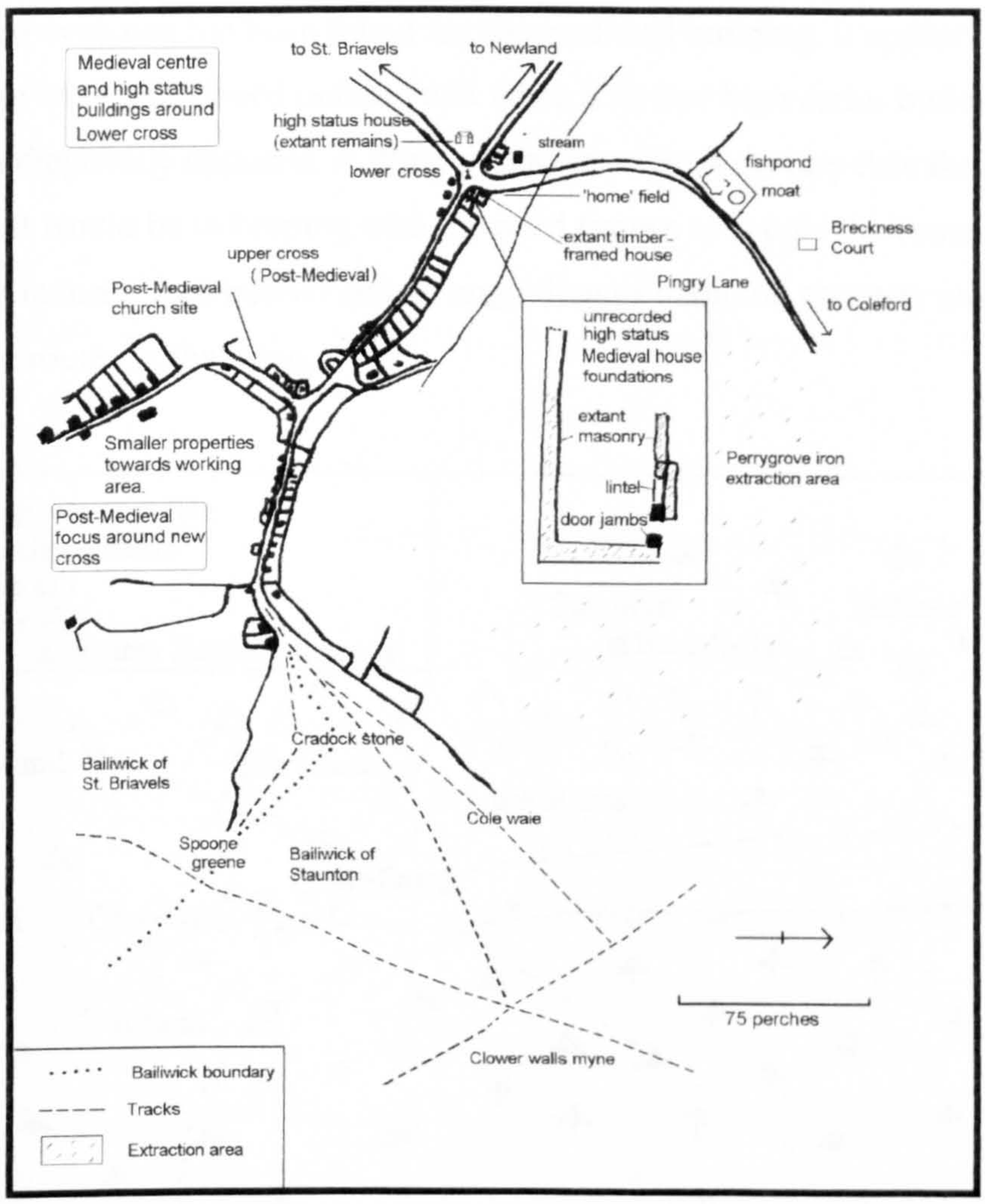


Fig. 47 High status buildings at Clearwell and the layout of the vill (based on the Map of 1608 and archaeological remains).

On the 1608 map (PRO MR 879), burgage plots line a street which links the mines to the north /south route from St. Briavels to Coleford. At the junction with this road, near the cross, small cottages are illustrated on the north-eastern corner plot. However, the author discovered remains of a building lying below the current ground level during recent (1999) building work at this site. A rectangular building, c.13m long and 8m wide, had walls c.0.6m thick constructed from dressed stone. In the northwest corner was a doorway and sill, measuring c.1m wide with an abatement for a door 0.07m thick. It stood next to a fireplace which had an external chimney breast, similar to a late medieval fireplace at Plusterwine Farm (Townley, 1997: Pl.21). No other remains were found but the small timber framed cottage in Home Field adjacent to the plot is thought to be fourteenth century (D. Jones, pers. comm) and may be the small building represented on the 1608 map, near the ford over the stream. No

documented evidence has been found for the medieval building. It appears to have been destroyed or abandoned before 1608 when a further high-status building appears on the plot diagonally opposite. A thirteenth to fourteenth century date for expansion of Clearwell would be in keeping with the need for ore to supply the contemporary armaments industry (see below) and an upgrading of manorial property along the western ore routes in the Dean.

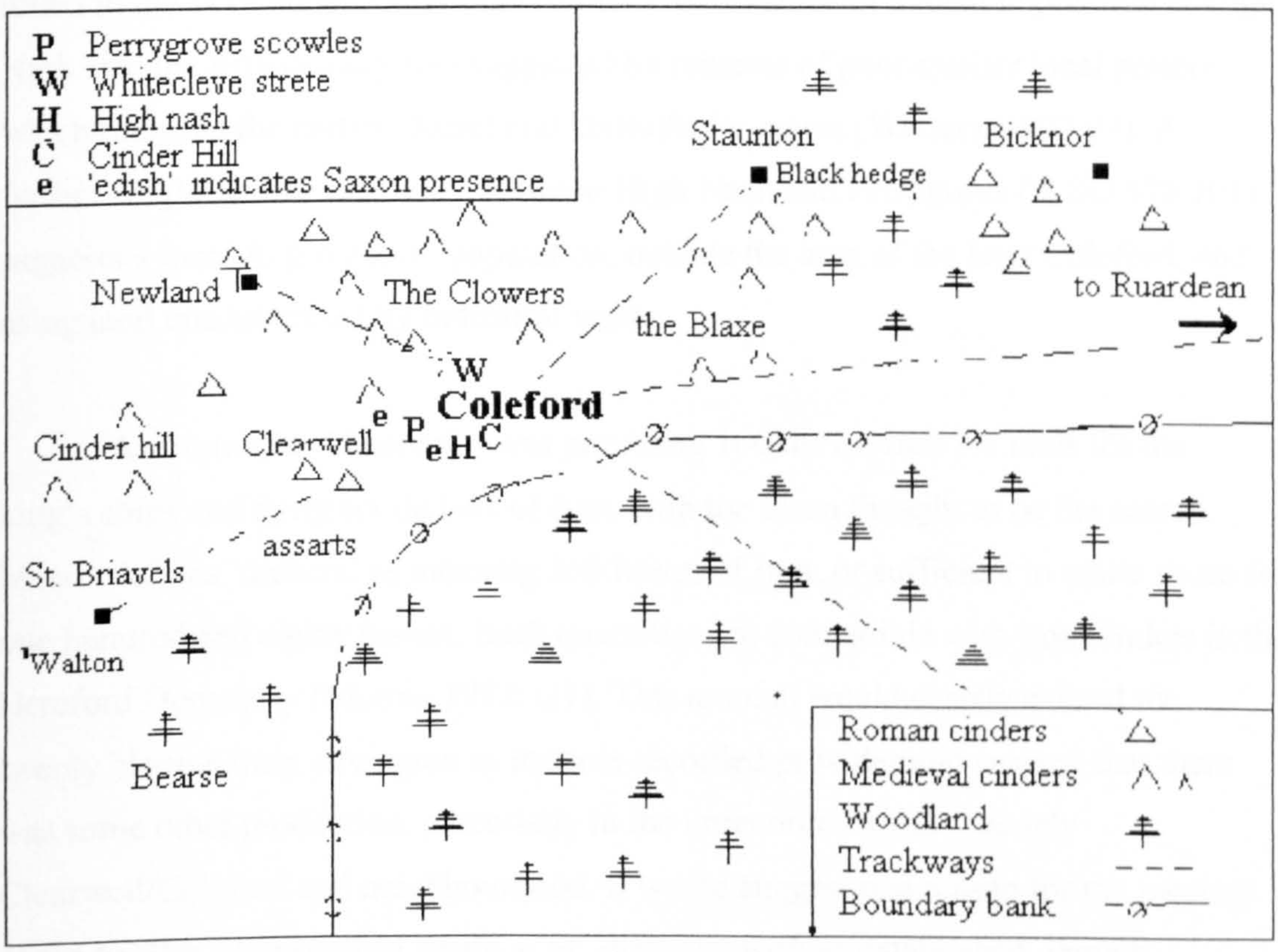


Fig. 48. Model of migration and vill development on 'brownfield sites'.

Coleford appears to have been expanding at this time, initiating from settlement along its converging roads (fig.48). One called 'Coleway' linked to the mines at Lambsquay and Clearwell. Another,Whitecleve Street, led to Greenhaye scowles and Newland. Proximity to the northern boundary of Perrygrove scowles suggests that this had been the primary ore source for the Roman population whose iron working remains and temple were found at High Nash (Walters, 1992:93-94) - residues from its smelting were tipped down Cinder Hill. The organisation and close association of these components of the iron industry, occupation, extraction and processing fit the pattern noted in the Weald, such as Bardown, (Cleere and Crossley,

1985: fig.23) where there is close proximity of extraction, processing and occupation sites. Such an association has not previously been identified for the Dean, with previous writers stressing the separation of the components.

The Coleford area may have had former links with Monmouth and supplied the extensive Roman iron industry there (Walters, 1999:78-80) - iron residues were found in the Wye under Monmouth bridge. Continuance of a local population at High Nash into the fifth century was suggested by remains of poor-quality local pottery which replaced the earlier Dorset and Oxfordshire wares (Walters, 1992:97). A further Anglo-Saxon 'edisfield' between High Nash and Perrygrove (at SO 578 101) suggests a local Anglo-Saxon population, outside the area of the later Coleford, and using land unadulterated by industrial waste.

At Domesday Gloucester was providing 100 drawn rods for nails for the king's ships and thirty six dickers of iron, with the Dean thought to be the source. Morris defines 'dickers' as meaning 360 lumps of iron, or sufficient to make shoes for one hundred and eighty horses. Such quantities are compatible with iron renders in the Hereford Domesday (Morris, 1982: G1). This amount would clearly exceed the twenty blooms from Alvington as the sole recorded provider and suggest that there was some other production, potentially in the unrecorded areas - namely Clearwell/Coleford and neighbourhood. It would suggest one reason for the location of the twelfth century royal castle at St. Briavels, with an established, though scattered, population which could supply skilled labour and construction materials. A resurgent industry is recorded by Giraldus Cambrensis in 1154; 'the noble Forest of Dean by which Gloucester was amply supplied with iron and venison' (Nicholls, 1886:11).

The monastic iron industry

A similar need for construction material may have initiated the interest in iron by the local monastic houses. In 1154 Flaxley Abbey had been given a grant of a forge at Edland (ch.8). This has been identified as eastern Cinderford and was later incorporated into Flaxley's grange of St. White's. The name 'Synderford' implies previous iron exploitation and the availability of cinders with which to supplement

newly gained ore. Labour for iron extraction may have been supplied by a low-status community at 'Wellington' (Farm) near the scowles below St. Whites and one kilometre from Littledean Roman villa. Wellington was linked to the river at Newnham by a steep holloway, near, but separate from, a further holloway next to a second grange of Flaxley - Littledean Grange (fig. 25). At this grange the stream was dammed to form a pond and may suggest some use of water power in production. Although St.White's was surrounded by scowles, its own land appears to have contained only isolated 'unreliable' outcrops. Illicit mines made at the grange in 1287 were ordered to be filled in by the Abbot (Madge, 1903:144). This action suggests that iron extraction formed part of a planned strategy for land-use, to create a cost-effective economy at the grange.

A holloway linked the two granges and access was also available along the Dean road to the vill of Littledean. Littledean was one of the three divisions of the Domesday manor of Dene, located near the Roman villa and the scowles of Collafield. Its market dealt in iron and the majority of its inhabitants, in the Lay Subsidy of 1334, were involved in the iron industry (Glasscock, 1975: 90-104). Twelve new houses had been built in 1282 demonstrating an expansion at the end of the thirteenth century (Hart, 1987:5). An emphasis on mining prevailed in 1379 when miners or craftsmen were recorded in the vill (Fenwick, 1998:357).

Nailmaking, which lasted as a major local occupation into the nineteenth century, had been established in Littledean by 1327. A nailer called Robinson was listed as one of the wealthier inhabitants of the vill at that time (Kear, 2000: 32). At the end of the medieval period seventeen out of the twenty three nailers recorded in the Forest of Dean in 1608 lived in Littledean. Nails may have already been one of the principal products of the private forges documented in the forest bailiwicks during the thirteenth century; a consignment was sent from Duni port in 1265 (Kear, 2000:330). The location 'Nailbridge' was recorded by the Regard of 1282 (Hart, 1987: 13). A nailer was at work in Mitcheldean by 1270 (Curry, 1996: 183*)* and a *Wirehouse Close* remained in 1576.

In the Weald the thirteenth century production of nails, horseshoes, wedges and bars - so-called 'plain items' (Cleere and Crossley, 1985: 103) - seems related to

the lower-grade ores available. Dean ores had a contemporary reputation for quality; the Bishop of Chichester was advised by his steward to buy iron from Gloucester in 1225 and the Dean product received consistently higher prices in the south of England (Cleere and Crossley,1985: 103). If Dean ore could command such prices it might seem surprising to expand an industry producing items which could be made from low-grade ore. All the nail-making areas are located in the north of Dean, and in areas exhaustively used during the Roman period. In the thirteenth century the source of iron for nailmaking in Mitcheldean was 'the Wilderness'. The data might suggest that there was local variability in ore quality within Dean during the medieval period, or that the industry was based on cinders as a cheaper, alternative material.

Flaxley Abbey held land at the Wilderness. Other land acquisitions by the Abbey around the Dean appear to coincide with iron outcrops: the Morse at Ruardean, Mitcheldean, Highnash and northeastern Coleford, Soilwell (near Lydney), although all were not necessarily used for their iron industry. All of these were, however, areas of intense Roman production and near deep cinder deposits. It may be simply coincidence, or there may have been selectivity on the part of the donors towards areas which offered lower returns or needed more input of effort to produce iron. Clearly a dispersed industry may have been necessitated by Flaxley's overproduction around the Littledean area, which appears to have overstretched the available fuel supply. Although the Crown upheld the Abbey's mineral rights in the face of local opposition (*Rot.Claus* 14 Hen III) its use of timber was restricted. Early attempts at curtailment included limitation of fuel for forging, initially to thorn, underwood or dead wood and then to two dry oaks per week. Finally the monastery was given a defined area of woodland within which to provide managed resources by coppicing . This was Abbot's Wood immediately south of the two granges (Crawley-Boevey, 1897:109-10). Extant embankments demonstrate the ten divisions of its harvesting cycle.

Further pressure on resources and the expansion of 'Forest' designation over Flaxley's landholdings may have been the spur for land purchase outside the Dean. Estates around Regilbury in Somerset were bought in the thirteenth century (Crawley-Boevey, 1897: 47) when pressure on all resources in the Forest were at their highest. The area was attractive both for its mineral potential and for sheep pasturage (a use

sustained into the nineteenth century). Iron ore, in haematite form, is present in the areas of Winford and Blagdon as part of the Somerset coalfield. Ore could be extracted either by shaft or quarried in open pits (Anstie, 1873:100). Conditions would seem similar to Dean. The abundant red ochre near Winford has a recent history for paint and was marketed across England for sheep marking in the eighteenth century (Gough, 1967:239) - a potentially useful resource for the medieval sheep industry. The value of this estate appears to have been disproportionately large compared to the other Abbey holdings; eleven pounds recorded in 1292 and twenty pounds four shillings and four pence in the *Valor Ecclesiasticus* (Crawley-Boevey, 1897: 47 and 49).

An alternative management strategy, given the fuel restrictions, may have been exportation. Astill suggests that Flaxley Abbey was the source of supply for Bordesley Abbey iron works, although he also suggests that smelted bloom was the more likely form of exported material (Astill, 1993: 298). A link with Forest iron resources is based, not only on proximity to the Dean, but also on Bordesley's use of a highly micaceous sandstone for building, which he identifies as potentially from Dean. The Abbey had close links with Flaxley, which was its daughter house, and may have influenced its production methods. Bordesley itself may have been using industrial processing from an early stage. Astill suggests that a Domesday reference to mills and iron blooms at Lexworthy, Somerset, may mean that such technology was already in use there by that period (Astill, 1993: 298) - there is no fundamental difference in mills used for either function (Holt, 1988: 149). Use of the Lexworthy Mill in iron production remains speculative; dates for such technology in Europe are twelfth century, with 1116 in France and 1130 in Spain (Cleere and Crossley, 1985:106). Dendrochronology on the timbers of the leat to Bordesley's earliest mill site produced a date of 1174-6 A.D.

Initially Flaxley's forges were described as 'errantes', moveable ones which could take advantage of woodland resources. This implies small-scale production. The demarcation of a regular timber supply from the thirteenth century would favour the operation of a static forge, alluded to in Rot.Claus.14 Hen III. The local granges had insufficient water supply for an industrial mill, but the Abbey itself was easily accessible along the Dean road. The valley in which the Abbey was sited was the

centre for an iron industry based on blast furnaces in the post medieval period (Townley,W. 1974). The Abbey was the first to close in Gloucestershire, with the profits of its industries going to a court favourite, Sir William Kingston, the Constable of the Tower of London; formerly Constable of St. Briavels. Production was near the precinct itself as illustrated on Kip's engraving 1777 (Flaxley Abbey), with extant remains of this building by the stream. Excavations at the Abbey have shown that the driveway on the illustration is formed of layers of slag (Watkins, pers. comm). No information was available as to the nature of this slag.

There is a distinctive composition to slags from an intermediate technology known as 'High bloomery', which uses 'proto' blast furnaces. They were found at a monastic site, Laskill grange in Bilsdale, Yorkshire, which belonged to Rievaulx Abbey (McDonnell, unpublished). She traces an expanding industry from small-scale widespread pre-monastic iron working sites to the positioning of a grange at a major iron resource, still using bloomery technology. This was followed by the use of water-power at Laskill Grange and finally the foundation of a smithy (late twelfth century) and blast furnace at the Abbey itself. There is both a technical and geographical progression with the industry consolidating and contracting towards the Abbey precinct and away from the primary ore sites. The pattern appears similar to the organisation of the iron industries of both Flaxley and Tintern Abbeys within Dean.

Tintern

Like Flaxley, Tintern Abbey received general mining rights within the Forest as part of its foundation grant. While other forge licences were revoked during the thirteenth century Tintern retained its rights. The location of its forge within St. Briavels has not been established, but the field names *Muncken Marsh* by *Quarrel Field* to the south of the vill on the 1608 map, suggest a monastic link - quarrels were iron bolts for arrows. Like Flaxley's Littledean Grange the area lay next to a 'Walton'. Metal detecting by the present owners of the field has produced no finds but they report that magnetrometry (by D.A.G.) recorded high concentrations in the area of the house itself which lies on a rise above marshy ground and adjacent to the modern road. Slag is a common find in fields to the other side of the road where the Abbey was given a discrete area of woodland - Harts Hill (PRO MR 879).

The road from Hart's Hill links to the major iron sources at Clearwell which could have ensured a regular supply of the raw material over a short distance. From St. Briavels smelted ore could be transported down an extant holloway to Brockweir with a short river journey to the Abbey. An alternative route would have used the extant track down to the Abbey ferry. Like the Dean road, which linked Flaxley's iron producing sites, this track is heavily metalled. At the Abbey itself vestiges of a late medieval smithy have been found in the western range of the outer precinct (Courtney, 1989: 99-143) but data is limited. While it undoubtedly was able to provide for the domestic needs of the Abbey, the smithy had economic potential for industrialisation. A profitable wireworks was functioning at the beginning of the seventeenth century when the Abbey site was in the ownership of the Earl of Worcester.

During the thirteenth century fuel restrictions were applied to Tintern. Like Flaxley, Tintern was given a discrete area of woodland from which it could supply its forges; Hart's Hill woodland (above) would have been similarly located adjacent to the proposed forge site. Fuel restriction may also be seen in the contemporary initiation of coppicing, documented on Tintern's Woolaston manor, as woodland receded from the St. Briavels area (ch.4). Coppicing would have provided a steady supply of wood for smelting purposes, without redress to Forest timber. Pressure on its own lands to produce fuel may have limited Tintern's potential agricultural capacity at Woolaston. It may have been a spur for lateral expansion and encroachment into neighbouring Tidenham, where two hundred acres were cleared to create a new grange (Ashwell) by 1282 (Hart, 1987: 9). Exportation of the ore may have also provided an answer for dwindling fuel supplies. Concentrations of ore were found adjacent to the medieval quay at Tintern's Woolaston Grange (ch.8). They were dated to the twelfth century by pottery inclusions (Allen, 1996: 226-230). The early date may indicate that Tintern was initially servicing its daughter house at Kingswood, to the east of the Severn. Analysis of ore found by Allen at other sites in the region isolated chemical traces to match origins to the Forest. Location of these sites suggests that the area served was small and concentrated around the middle and upper estuary (Allen, 1996:226-230). Dating of these disparate sites is unclear, but Allen postulates a medieval trade, similar to that in the Roman period.

Tintern's forge at St. Briavels was in close proximity to the Crown's 'great' forge during the thirteenth century. This concentration of iron working may explain the location of iron resources for the Abbey of Grace Dieu. This monastery, located near Monmouth, was the last Cistercian house in Wales. Its grange at Stowe, near to the major iron resource around Clearwell, had been established by 1227 (Williams, 1986: 232). It did not, however, receive local mining rights there. Grace Dieu's own rights were located in the northwest of the Dean, around Weston-under -Penyard, at the 'Hermitage of Penyard' (Williams, 1976:59-75). Two itinerant forges were permitted in an enclosed area. These outcrops had been extensively worked during the Roman period, and cinders may therefore have formed the basis of its industry. The Abbey's economic problems forced disposal of these valuable assets within forty years; leased first to Joan de Knovile in 1267 and then quitclaimed to Sir John Inge in 1334 (Williams, 1976: 59-75).

Gloucester Abbey had a forge at Hope Mansell in 1282 (Hart, 1987:49). This pre-Conquest Abbey also had forging interests at its manor of Bullo. A forging site has been identified at Aylesford in the west of the manor (Curry, 1996: 17). Aylesford lies on the Soudley Brook, which could have been harnessed for water-power, and in close proximity to the iron deposits south of Soudley itself. However, the manor is also known to have forged lead for the Abbey roof. Such a material must have been imported to the area by boat - possibly from the Mendips. No physical evidence has been found for such transport in the Dean; although a medieval boat carrying ore was discovered lower down the Severn at Magor Pill (Nayling, 1998). Boat transportation was, however, used by Llantony Priory; they are recorded as transporting iron ore through their port of la Were (between Alvington and Aylburton) by 1282 (Hart, 1987: 52). This exportation appears to have been a change of policy to the previous century when Llantony had forges at St. Briavels and Newnham (Rhodes, 1989: 19), indicating interest in both the northern and southern areas of outcrops.

Administration

The Dean ore fields appear to have had two separate areas of operation, referred to as 'above the wood' (the area around Newland and St. Briavels) and 'below the wood' in the north (sometimes called 'the gale of Mitcheldean'). Although the Crown issued licences which controlled the number of forges, use of fuel and pricing within the

Dean, it does not appear to be directly concerned with extraction management in these areas. This remained in the hands of the miners, and their 'laws and privileges' were later enshrined in a document known as the 'Book of Dennis'. The laws state that they pertained to Edward III, though there is no proof of the dating. Bounds of the area in which these rights were implemented match those of the Forest at its greatest, thirteenth century, extent. A stick of holly was used to swear oaths at the miners court (Nicholls, 1866: 74) and many of the rules are common to those found in other mining areas of Britain or on the continent. Extant 'Escheat roles' for a Mine Court date to 1469/70 (GRO D6177) and deal with local mine courts held at *Hyll Pytt* which was 'above the wood'.

This location has previously remained unidentified. On the map of 1608, however, the name *Hilles* occurs to the west of Bream church (PRO MR 879). It refers to a distinctive, dome-shaped hill adjacent to an area of extensive underground iron workings. These workings are locally assumed to have been Roman but there is

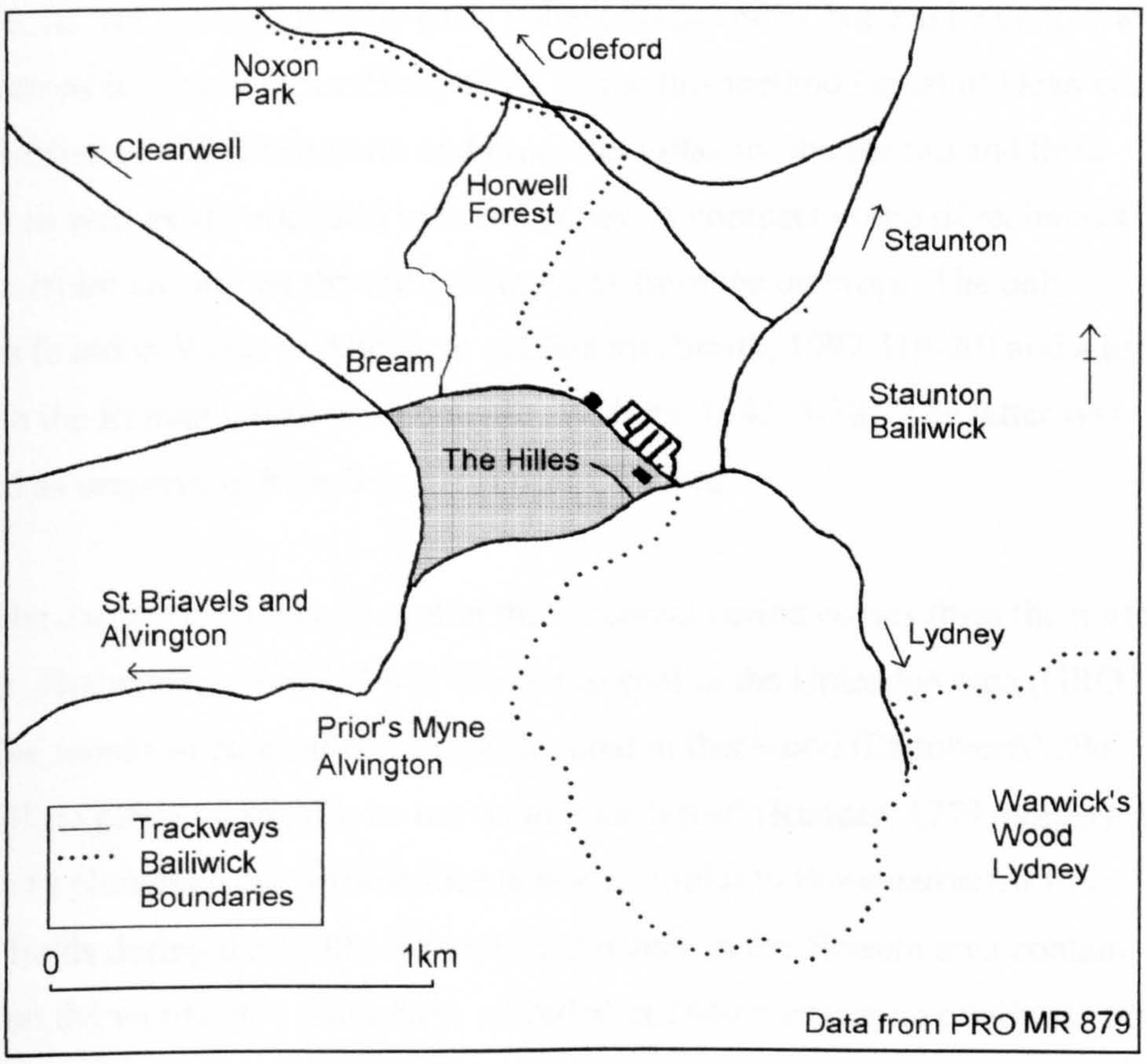


Fig.49. Proposed location for the mining court at 'Hyll Pytt'.

no evidence for dating. The depth and extant flooding might suggest at least some medieval involvement; it could have been 'the pytt' in the escheat rolls (fig.49). Hilles (SO 595 055) is centrally located along the southern ore bands near the boundaries of Bearse, Staunton and Lydney. In 1608 it is illustrated with converging trackways, indicating a role as a focal point. Such a territorially marginal site with distinct topography, would echo the siting of Saxon moot places for community business and, as such, would provide a suitable location for the fifteenth century mining court. However, by the seventeenth century coal miners made up half of the Law Court jury of forty eight men (Nicholls, 1866:50).

Coal

Coal, in medieval records, appears to be regarded as an inferior product, given a lower value and suitable for domestic use or possibly for smithing. It was termed 'sea coal' to differentiate it from 'wood coal' or charcoal. An extensive cover of 'head' restricts outcrops to just a few areas in the Dean and the majority of the coal measures require mining for extraction. Like iron, however, chemical constituents of coal can identify its source: its 'reflectivity' usually has a value of 0.5-0.66%, but can be up to 0.8% from outcrops in central Dean (Berry Hill). Using this method Forest of Dean coal has been identified at both Chedworth and Frocester villas for the second and third centuries as well as at Park Farm villa in Lydney. A compact group of recipients in Gloucestershire are all less than fifty kilometres from the outcrops. The only examples found in Wales to date were at Llantwit (Smith, 1997:319-20) and a limited amount in the Roman layers at Monmouth (Walters, 1981: 3-28). The latter was identified as originating from Berry Hill near Coleford.

The earliest reference to coal in the medieval period comes from the north of the Dean . Documents from 1154-1189 refer to coal in the Upleadon area (GRO D 1938). The monks of Newent had a right to 'coal in that wood (Eadulverfshelle /Edenshill) to plough it up, if it be not within our forest' (Rudder, 1779: app23). The reference to ploughing suggests surface deposits similar to those extracted from Yorkley fields during the 1990s. Several field names in the Newent area contain variants on the word *cole* - *Kittlebury,* recorded in 1840 contains an earthwork ten feet deep and eighty yards long with black smut at the bottom, and is traditionally known as a coal working. Ridge and furrow runs partially down the sides of the earthwork

and indicates later agricultural use. Isolated outcrops were also mined on Tidenham chase outside the mining area.

Within the iron-mining area seacole at Abenhall, Bicknor, Staunton, Blakeney and the Lea was mined for the economic benefit of the Bailiffs. At Lydney the lord of the manor was allowed as much seacole as he wished without payment to the Crown (Hart, 1987:58). The Crown itself received payment for extraction in the demesne lands of Bearse, Ruardean, Mitcheldean and Littledean. Iron and coal mines are included as one revenue in 1276 (Inq. 15 Ed.III: 75). Revenue from the Earl of Warwick's mine at Lydney was exempt other than for exported ore. A similar mine owned by Lord Richard Talbot also paid nothing.

Increasing use of coal for fuel during the thirteenth century would seem to reflect a contemporary shortage of timber. Closure of forges was imposed in 1216 with restriction to use of dead wood for fuel (Nicholls, 1886:12). The author notes that the measures excluded St. Briavels (Crown owned) or those forges belonging to landowners situated on the eastern and northern sides of the Dean (distant from the Crown activity). Similar restrictions on individuals remained into the 1220s, although forges still appear to have functioned at the Dean vills of Bicknor, Ruardean Mitcheldean and Littledean (Nicholls, 1866: 13-16). However these appear to have been using charcoal made outside the Forest, sometimes 'in Wallea' (Wales).

The thirteenth century iron industry and armaments

By 1282 a total of sixty forges was working in the forest, mainly on short-term leases (Hart, 1987). Forges at Staunton, on Crown demesne, were using local charcoal and accounted for 75% of contemporary felling and 83% of the charcoal pits. Ore recovered from the manor received a lower price than that from Bearse or Mitcheldean, perhaps to curb the production levels. In 1608 fields named Blaxe Hedge and Blaxe Mead are illustrated near to the vill itself, adjacent to a large, unoccupied area called 'The Blaxe' between the roads to Newland and Coleford (PRO MR 879). The name suggests industrial use which blackened the soil. Today 'The Blaxe' is rough woodland (fig.48). These place-names would seem to indicate the geographical extent of the medieval iron working to the south of the vill: as documents record the frequent removal of cinders from 'Staunton Lane' during the

fourteenth century (GRO G 167 gg 1368). 'The Clowers', on the western side of the Newland road, would have formed an extension of extensive scowles between Staunton and Greenhaye which have now been destroyed by massive quarrying (Walters, 1999:14). The medieval 'Myne' of Staunton lies to the west of the vill, up to the bounds of Hadnock Wood. The two operations of extraction and forging may therefore have been separated, based on fuel availability (see. ch.5). The location of ore near to the Wye would, however, have facilitated exportation.

The 'Book of Dennis' (above) mentions smithmen of Monmouth, Trellech, Caerleon, Newport and Berkeley, in covenant with a 'smith holder' within the bounds (of the Dean) (Nicholls, 1866:72). There is no definitive description of the role of 'smith holder'. The author would suggest that a plausible explanation would be that it applied to a Dean resident who was able to procure iron within the Dean and either employ or 'sub-contract' smiths for manufacturing processes in areas outside the Dean. Such an arrangement would be compatible with the apparent need to employ methods to conserve the woodland of the Forest in face of an unsustainable demand for industrial fuel (above). Nicholls suggests that such partnerships, called 'verns' were operative in the fourteenth century (Nicholls, 1866: 25). The number of forges at Staunton had fallen in the early part of the fourteenth century when St. Briavels and Mitcheldean dominated production. By 1276 income associated with the Severn - twenty six pound sixteen shillings and three pence - had already exceeded that from mining interests. 'Great and little mines with sea coles' on Crown land produced an income of twenty three pounds sixteen shillings, nine and a half pence, although rent of smithies produced a further eleven pounds six shillings (Nicholls, 1866:20). At St. Briavels itself the making of plough shares would indicate a change of crown interest from the military production of the previous century, especially 'quarrels' (arrow-heads).

Quarrels were produced in vast numbers during the thirteenth century. Production was centred on St. Briavels by 1223 when the Constable was ordered to send 6,000 quarrels to Montgomery (*Rott.Litt.Claus.*1: 576), although the name 'Bolt Lane' in Gloucester demonstrates a continuing munitions role played by the city itself: William and John leFevre and William le Fletcher were making arrows in the 1220s and the city retained responsibility for providing iron and charcoal for this

purpose (*Lib.Rolls,* 1231: 192-3). The Malemort family, who dominated Dean quarrel making moved from Gloucester in 1227. This move transferred the financial burden for provisioning the industry to St. Briavels, recorded in almost annual accounts during the 1230s and 40s (*Lib.Rolls*, 1245-51:436). The transferral was never absolute

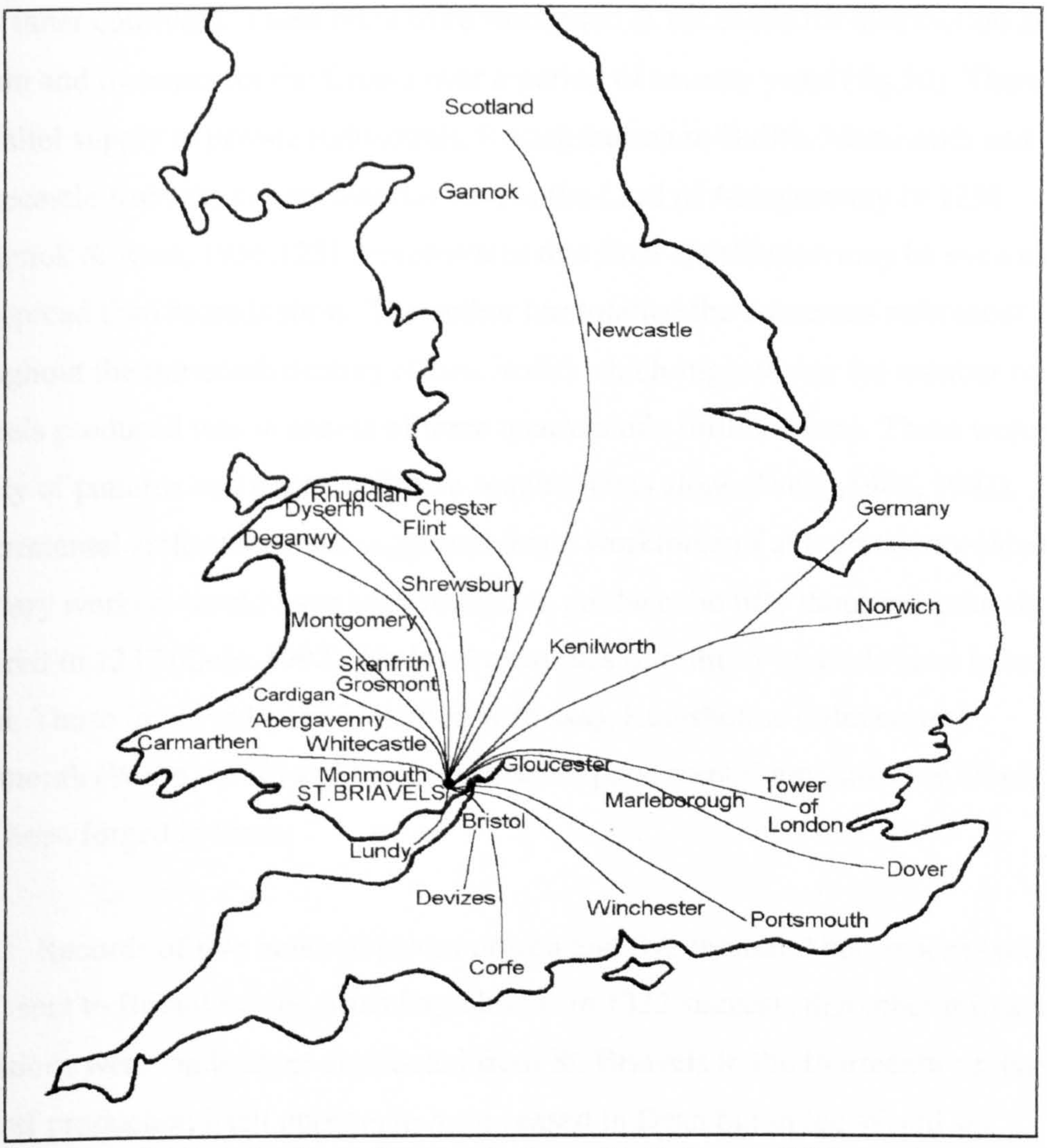


Fig. 50 Distribution of quarrels from St. Briavels (13th century)

with the Sheriff of Gloucester required to make up any shortfall. Private individuals also contributed; in 1232 Thomas de la Forge had to pay two hundred arrows to St. Briavels as rent for his tenement in Upton. Several fields in the Dean bear the name *quarrel field*, a name which has been interpreted by the EPNS as 'quarry'. Given the topography and location of two at St. Briavels, one in conjunction with *monken marsh* (Tintern's forge), the other next to *fletch*(arrow) *field* the name may indicate either the site of forges or land whose proceeds contributed to manufacture, as at Upton. A

further 'fletch' land was illustrated near Staunton in 1608 (PRO MR 879). An analogy would be the *chapel* fields whose income sustained chantry foundations.

Quarrels were made at St. Briavels castle which had a forge on the south side of its inner courtyard. These bolts were stockpiled at the castle for distribution all over Britain and overseas for the Crown over a period of seventy years (fig.50). There was a parallel supply to private individuals. Redistribution to Builth, Monmouth and Whitecastle from the twenty bundles sent to the Lord of Abergavenny in 1256 (Roderick & Rees, 1956:125) demonstrates that final distribution may be even more widespread than records show. The author has totalled the numerous references throughout the thirteenth century (*Close Rolls*) which suggest that the number of quarrels produced was in excess of three quarters of a million items. These were in a variety of patterns and sizes for Crown requirements alone (Webb,1988, 1992). Experimental archaeology has suggested that a workforce of at least twenty-three plus ancillary workers would have been needed to produce the fifty thousand quarrels required in 1257 (Cole, 1992). No local examples of military quarrels have been found. Those found at Dyserth (shafted with ash), Kingsholme (Gloucester) Monmouth (Webb, 1992) and Lundy (Gardener pers. comm) are, however, likely to have been forged in Dean.

Records of five hundred pieces of iron and five thousand horseshoes (with nails) sent to Bristol for the 'Irish Expedition' in 1332 suggests that other military provisions were made at, or distributed from St. Briavels in the fourteenth century. Quarrel production itself appears to have ceased in Dean but in the Weald six thousand arrows are recorded in 1338 and two hundred and sixty six 'sheaves' in 1346 (Cleere and Crossley, 1985: 89). The available data suggests a complete reversal in products between the two areas from one century to the next. Dean was a regular supplier of ore to the Weald (Cleere and Crossley, 1985: 89) and therefore continued to contribute to military needs indirectly. Proximity to the borders during a period of wars with the Welsh may have initiated local quarrel production on the grounds of logistics, but a changing focus for military campaigns, coupled with an apparent shortage of fuel in Dean would both seem reasons for the demise of the local industry.

Provision of armaments for military campaigns during the thirteenth century, was also backed by provision of military personnel. Miners and foresters had the necessary skills in land clearance, tunnelling (for siege work) and demolition. Their success was commemorated in subsequent landscape use by privileges which were fiercely guarded and never revoked. Some were rewarded with land, such as those who fired mines beneath Bedford castle to break the siege in 1224 (*Rot.Litt.Claus* 1). Others became Free miners, qualified by being born in the Hundred of St. Briavels and having worked in a mine for a year and a day. Modern descendants can still open a gale (mine) and extract minerals (usually coal) wherever they wish unless harming others. They are still governed by a local court and subject to similar rules as those in the 'Book of Dennis' (above).

The increasing wealth and freedom of the miners encouraged the growth of the western settlements. Location appears to have concentrated largely on 'brown field' sites of ancient cinder deposits. This avoided contemporary agricultural areas, active mining sites and the woodland of the Royal Forest, in an increasingly crowded landscape. Use of such brown-field sites would not have had a detrimental effect on the hunting lands and would seem to have been permitted. Coleford, the location for multiple forges during the fourteenth and fifteenth centuries (GRO D 420) first appears in the records in 1275 (Hart, 1983:1). A proliferation of tracks around the vill was recorded by 1396 (GRO D 1677gg 24, 82, D 2244/56, D 33/227/a12) with corresponding ribbon development. An expanding economy can be seen in the aggrandisement of the local manor houses - Bicknor, Clearwell, Brecknock Court, Ruardean (ch.4).

Although political settlement with the Welsh allowed a dilution of English markets by Welsh iron (Smith, 1995:283) protectionists policies were maintained into the mid-fourteenth century. The *Lex Metallis Dicta* (Ed. III 1354) prohibited the export of ore either made in England or imported. Such imports gradually competed with local production. By the sixteenth century, shipping records by merchants from Bristol, as well as South Wales, contain many references to the importation of Spanish iron via the Severn. The lower continental price reflects a minor 'industrial revolution' with the widespread introduction of water power (Vanes, 1974: 9). Trows travelled to Midland destinations and even delivered consignments to the Dean itself

via Westbury, Woolaston and Aylburton (Vanes, 1974: 9). Imports would have threatened the local iron economy which would need greater productivity to survive. Coleford remained as the main centre for development of the industry based on the Mushet family and a continuation of production at Whitecleve. External ownership also transformed monastic premises into successful, though limited businesses. Adherence to individual enterprises by the free miners would seem to have been a factor which prevented the development of a major cohesive industry such as that at Ironbridge in the post-medieval period.

Conclusion

The Roman iron industry left a landscape of scowle holes, and slag deposits which covered wide areas of the Dean, together with an infrastructure of roads and tracks to the surrounding towns and villas on the periphery of Dean. Most of the major surface outcrops would seem to have been mined by the end of the period. Some such as Perrygrove, or Wigpool, which supplied the intensive industrial processing at Ariconium and Newent are thought to have been worked out (Walters, 1992: 90). At other sites, such as the Wilderness and Lydney, tunnelling indicated a more labour intensive industry, based around the major ore sources. Economics may therefore have played a part in a decline in the Dean industry several decades before that of the Weald (Walters, 1999:99). The later Roman period appears to have been closely associated with the agricultural regimes of the villas, with extraction linked to existing rights related to particular land ownership. The industry was fragmented and in some cases, such as Bicknor, appears to have been utilising new, smaller outcrops into the post-Roman period.

Comparison with the development of the iron industry in the West Midlands does not show marked differences in production until the post-medieval period. There iron working appears to have emerged from mixed economies on rural or suburban sites with production remaining high into the fourth century, diminishing during the Anglo-Saxon period and then regaining importance into modern times (Scrufer-Kolb, unpublished). Previous work suggests that there was a difference in the Dean organisation of the Roman industry to that of the Weald. In Dean primary smelting was undertaken away from the extraction sites and separated from smithing activity, though there is no apparent explanation for this.

The author suggests that any differences may have resulted from the differing political organisation between the Weald and Dean which pre-dated the Roman era. Centralised Roman exploitation, first by the military and then by villa owners, the clustering of iron processing around Hereford during the Anglo-Saxon period, and the iron requirements of Gloucester under the Normans suggests continuing close control of a prestige product by elites in this politically volatile border area. The nature of the Dean ore would have made production in designated sites a viable proposition: a high metal content would have meant that transportation was cost effective. Scale of production during the Roman period also appears to have depleted fuel stocks which necessitated exportation of the ore to external processing areas as part of a wider trading network.

A second explanation for the lack of specialised centres within the Dean itself may be the low population density seen at Domesday (ch.4). Moving ore to Roman Ariconium placed it in a fertile area which could support an industrial community. Ariconium appears to have been supplied with both ore and fuel from a central arterial road into the Dean, though the industry was unsustainable in the long term. Ore became increasingly more difficult to obtain and less cost-effective, necessitating tunnelling, and later, pit-props. Underground work by both Bick and Standing (pers.comm) has noted depth limitations to extraction patterns, such as at Plump Hill, with working resumed at a later date. The position of the spring-fed nymphaeum at Boughspring villa suggests that the Roman water-table may have been higher than in modern times and modern mining in the Forest has always necessitated the use of pumps. Winter rains may have prevented access until the water levels dropped during the summer, although geology may have favoured a longer season in the higher and drier western mines. A favourable climate during the Roman period may perhaps have extended the season, but emphasis on extraction rather than production would have maximised Dean labour during the windows of opportunity. Such factors would maintain a part-time specialisation, rather than full-time craftsmen, with no tradition for a comprehensive industry.

While ore quality and seasonality promoted some differences in methodology between Roman Dean and the Weald, the author suggests that these have been emphasised, in previous work, and similarities between the areas overlooked. Both

Weald and Dean had no towns within the central areas, villas were peripheral and both exported ore via road and sea, leaving an infrastructure for medieval populations. The hypothesis of a separation of working sites and settlement in the Dean iron industry can no longer be upheld, by an increasing availability of archaeological evidence. At High Nash (modern Coleford) the close proximity between ore pits, processing sites and occupation matches that at Bardown in the Weald; there appears to have been similar organisation south of modern Littledean and at Roman St. Briavels.

Although place-names suggest that Dean communities continued to live close to ore resources there is, as yet, no evidence for exploitation during the Anglo-Saxon period, although small-scale surface extraction is likely for local use or to supply external centres. The post-Conquest climatic improvement would have enabled old mine workings at major sites to be resumed, as noted by Bick and Standing. Workings were concentrated in particular areas within a landscape on which alternative demands were increasingly made. Roman slag-tips were colonised to provide accommodation for the workforce.

Initial concentration of iron processing at Gloucester for crown use during the post-Conquest period would again have put pressure on infrastructure and space within the city. This and a greater remaining reserve of iron in the southern ore band may have instigated the move of the quarrel industry to St. Briavels, with a castle to provide a secure storage facility for the munitions it produced. The needs of this industry encouraged distribution of private forges and non-military production along the eastern and northern boundaries of the Forest, to conserve both mineral and fuel for Crown consumption in the west. Conservation of the central woodland area maintained this physical separation. Although the foundation and subsequent expansion of Newnham to a borough and port, provided a centre for administration and river transportation, Littledean retained its focus for the iron industry of east Dean throughout the medieval period. It provided accommodation, production areas and a market outlet. This was nearer to the outcrops and, like Coleford on the west, on a major distribution route. Nails produced at Littledean could either supply military needs or supply the markets of the Midlands.

The nail industry appears to have expanded by the beginning of the fourteenth century as the local Crown production of arms diminished. It would have provided an outlet for the products of an increasing number of free miners who represented the end of a chain of patronage: Crown income from ore after the Conquest had partially devolved to the Forest Bailiffs, local dignitaries were allowed private forges, and, finally, individual miners were allowed freedom of extraction for war services. Periodic removal of large numbers of such personnel for this purpose, accompanied by periodic limitation of forge licences, fuel restrictions and iron requisition by the Crown would have produced an unreliable supply of material for private production in the thirteenth century - a further factor against the early establishment of an iron industry. A separate chain of patronage gave lands to the Marcher Lords. Some like Warwick and Talbot became rich on the profits of iron. Others donated land to local monastic foundations which created their own separate iron industries. Monastic estates seem to have included a high proportion of previously-worked mines or slag deposits with small residual communities.

Although several religious orders owned land in the Forest, success in iron production belonged to the Cistercians. Like secular producers they were restricted in fuel consumption during the thirteenth century, but their estates were large enough to overcome such obstacles and produce their own timber supplies. Perhaps as a further insurance both Flaxley and Tintern had access to other iron resources on lands outside the Forest. Production sites near the Dean ore sources were subsequently supplemented by iron-working at their own precincts. It was these centralised production areas that formed the basis of post-medieval iron works, but for the benefit of owners outside the Dean.

Although the Dean miners had achieved freedom to benefit their own families, adherence to individual enterprises would seem to be a major factor which hindered the development of a major, cohesive iron industry. Even till the end of the twentieth century a miner would run a few sheep as his commoner's right. This part-time pastoralism meant that specialisation was never totally achieved for the majority of the mining community. Investment, such as that of the Mushets at Coleford, was not part of an integrated scheme and success was not sustained - an inland position, drainage problems and competition from cheap imports mitigated against success on

the scale of Ironbridge. Local miners gradually changed their interests into mining for coal.

CHAPTER 7: FISHING

Introduction

The geographical position of the Forest of Dean makes it ideally suited to riverine exploitation. It is bounded by the tidal Wye and Severn, with the Leadon to the north. Seventy species of fish can be found (Winters, 1700 and Maclean, 1883 Vol.3:319). Each occupies an ecological niche, dependant on tidal range, salinity, topography and depth, or access to pills and streams, necessitating specific structures and methods for entrapment. Modern catches in the Severn and Wye concentrate on salmon and elvers (baby eels). The early importance of these two species can be seen in their depiction on the cella mosaic in the Roman temple at Lydney (Bathurst, 1879: pl.viii).

During the medieval period Severn salmon (and lampreys) feature in court records as either gifts or for royal consumption, such as in 1246, 1250, 1251(*Cal.Lib.Rolls*, 1245-51: 41,306,335,345). These would have been caught in the estuarine conditions in the Severn or Wye. The usual extent of the modern tidal head in the Wye is Brockweir, although Redbrook can be reached on an exceptional tide. In the Severn the tides can reach past Gloucester, although Awre is usually considered the limit of salt-water marshes (Burd, 1989:46). Such a tidal extent, together with river width, the nature of the shoreline interface and access to the river provided further variable factors influencing the nature of local fishing. Potential methods are by hand (nets, lines or spears), from boats, or from fixed 'engines' (static or tethered traps) (Putley, 1999: 57-65). Illustrations from a diadem found at Lydney's Roman temple demonstrate contemporary use of spears, lines and nets (Bathurst, 1879: pl. xiii). Even if such items were found, their portable nature would not identify the sites of local fisheries. No local boats have been found from either the medieval period or earlier to identify how they may have been used for fishing.

Research into the fishing industry must, therefore, rely on documentation or archaeological evidence of fixed engines. Environmental evidence of a predominant pattern of alluvial deposition and extension of the Dean coastline, from the Roman to the medieval period (ch.2), demonstrates that potential locations must have changed over time, relative to contemporary shorelines. Although the damp conditions under such alluvial deposition are likely to have preserved some organic structures, such

sites would now lie under agricultural land; remains of stakes belonging to a fishing structure were found in grassland at Alvington (Waters, 1955:171), but no details were published. Discovery and identification of such sites is largely fortuitous and depends not only on a constant watching brief, in areas where erosion is currently taking place, but also on recording before such fragile remains are destroyed by the elements.

The types of fishing structure used along the Severn shores of the Forest of Dean in modern times have been described by Green (1992:69-76). The three methods are lave net, stop boat and 'putcher'. Putchers are open-weave conical baskets held in ranks on a timber framework with their open end facing upstream to utilise the ebb tide; the size of their mesh ensures that only sizable salmon are caught. Putcher ranks, such as the extant remains at Horse pill (ST 582 974), usually extend from low water mark up to the mean high water mark to ensure maximum coverage by the tidal flow. The sites of modern fisheries were certified, by Act of Parliament in 1865, to those who provided proof of immemorial usage. Such a claim was made for this rank of 300 putts which had been recorded by 1707 (Curry, 1996:57). A 'putcherewe' was also recorded at Awre in 1493 (Maclean, 1883) which would suggest that this method was already being employed during the medieval period.

Putchers appear to be a development of the earlier 'putt'. The putt was a three-component trap, with a large outer basket (the kype) - measuring c.4m with a 1.5 m diameter. It funnelled into a more closely woven basket (the butt), which in turn led to a smaller, removable, basket in which the fish were caught (Putley, 1999:58). The whole structure was held up into the path of the ebbing tide by stakes which secured it to the river bed in the inter tidal zone. Such stakes can be seen in situ to the north of Ley Pill (ST 600 984). Being more closely woven than the putcher, it was possible, with the putt, to catch a wider range of fish.

These examples are only two of a wide range of fishing structures which have been found in the intertidal zone of the lower Severn estuary (Bell, 2000: 86, Nayling, 1999: 93-113, Godbold & Turner, 1994: 19-54). Varying in scale, position, design and arrangement they represent different methods by which fish have been harvested, the earliest dating back to the prehistoric era. These examples from the Severn Estuary

compare with examples of fisheries throughout Britain, many of which were published in 1998 (Aston, 1988). Carbon-dating or dendrochronology of the archaeological remains of several fisheries in the lower Severn Estuary, can provide an absolute chronology with which to compare similar finds in the Dean. At present the small scale and species of wood found in Dean fishing structures makes dendrochronological dating impossible and the cost of carbon dating was prohibitive for the author. Samples have been taken and prepared in readiness to send to Beta Analytic in Florida for dating when funding becomes available.

Field work

The majority of the current author's finds are located in the area between Stroat and Woolaston (Townley, 1999:80-83). At Stroat remains of a 'V' shaped wooden structure (fig.51) protruded from the mud at low tide, with its open end facing upstream and its apex in the outflow of Waldings Pill (Townley 1998: Fig.2a).

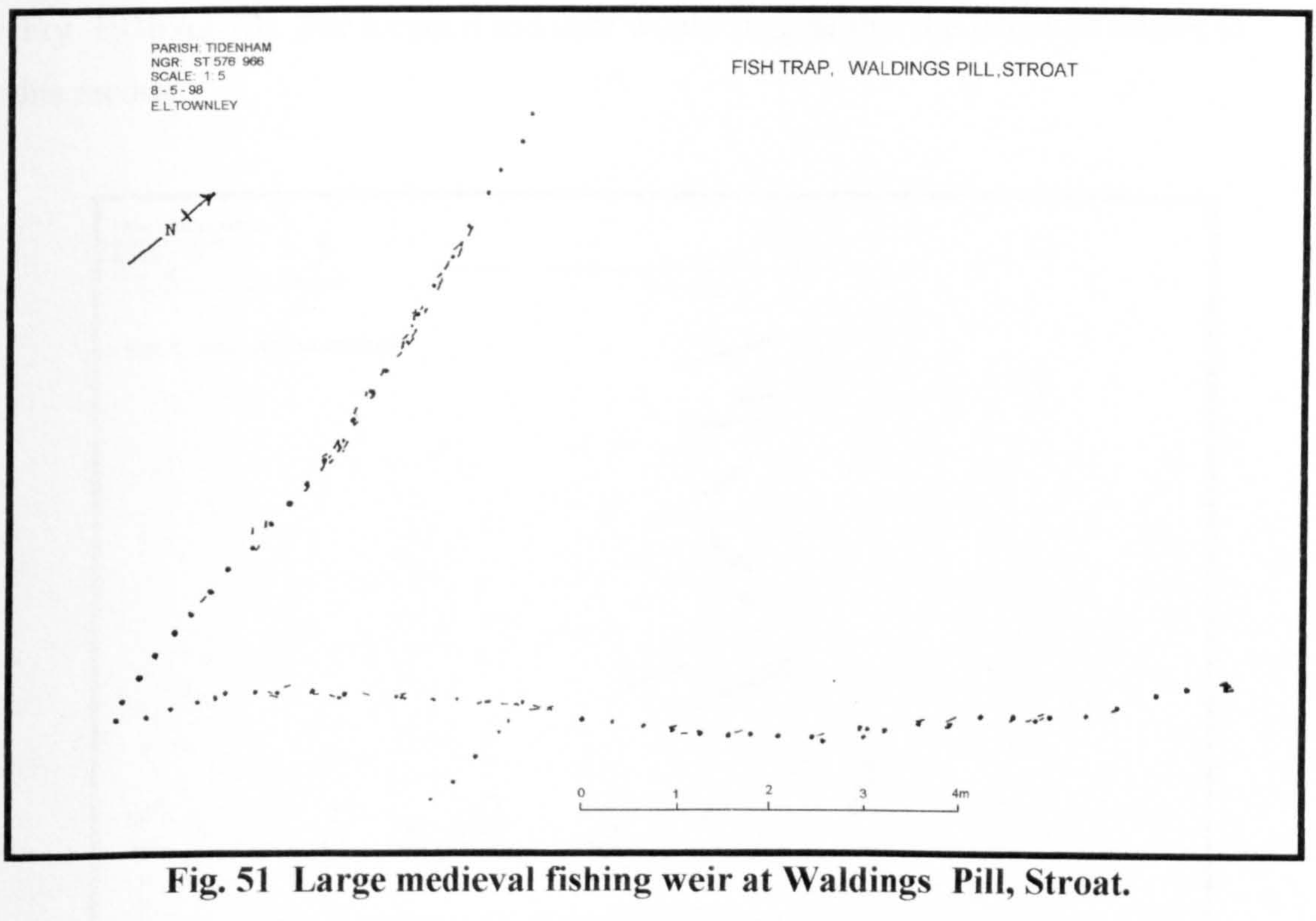


Fig. 51 Large medieval fishing weir at Waldings Pill, Stroat.

The arms of the weir extended c.12m in length, and a truncated set of stakes running diagonally outwards from the eastern arm suggest that it may have once been part of a set of linked structures. The arrangement is similar to fish weirs observed on the Gwent levels (Nayling, 1999: Fig.2) which have been dated, by dendrochronology, to use in the twelfth and thirteenth centuries. Both the Stroat and Gwent examples used

roundwood stakes of hazel and alder, although oak was also used at the apices of the Gwent version (Nayling, 1998:100). Similar types of structure have been found along the Somerset shore (Hilditch, 1998). The Stroat structure can therefore be considered as belonging to a regional pattern.

Local adaptation is noted, necessitated presumably by the steeper gradient of the intertidal zone along the Dean shoreline in comparison to that found in the lower estuary. The Stroat example appears to have been made in situ. Its stakes, driven into the grey mud layer, had double-wedge shaped ends, rather than points; these would have provided a more secure anchorage. Extant hazel rods were woven between the uprights to form single-weave wattle. They form the remains of a triangular lift rising from almost nothing on the open end to full (but unknown) height at the apex. This would present a far more resilient shape to the force of the tide, with less mobility on the open ends. Ownership of two weirs is recorded by a William Walding in 1306 (Fry. 1910:63-73). The location and date would suggest that the structure relates to this record.

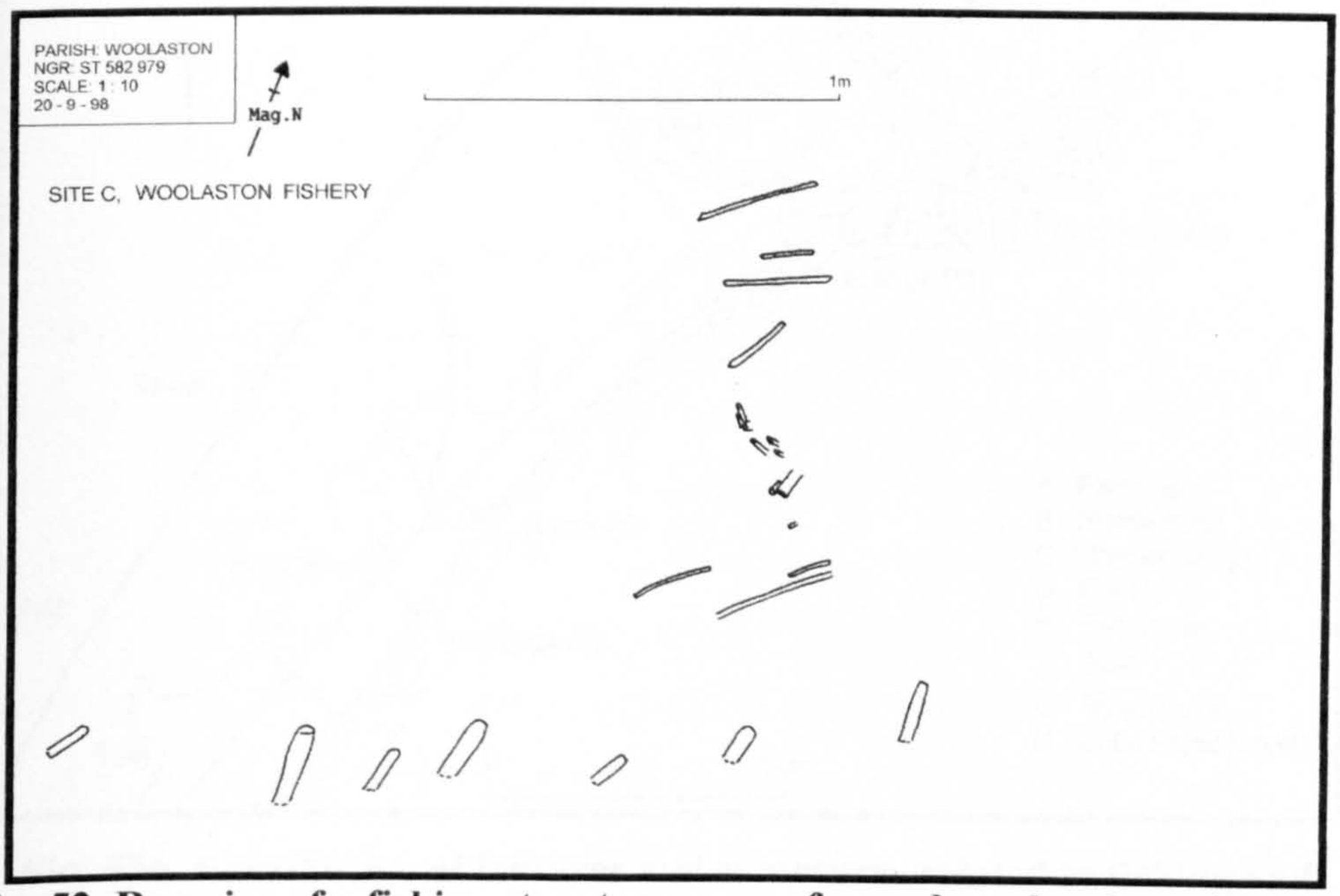


Fig. 52 Remains of a fishing structure; row of roundwood stakes with some fallen hurdle.

Other 'V' shaped structures were found by the author further upstream. One, at ST 588 978, is similarly located at low tide level, but is anchored into the scoured bedrock (Pl.19). A zig-zag arrangement of post holes can be seen, representing two

weirs. Within the holes are remains of wooden stakes, c.0.07m. in diameter. The angle between the 'arms' of the stake rows is, however, far smaller than that at Waldings and suggests a different design. At Woolaston (ST 591 978) a line of stakes, angled away from the river and suggesting the remains of another 'V' shaped structure, lies higher up the tidal range, though within the parameters proposed by Putley (1999: 63). This structure included some split timbers, in addition to roundwood (fig.52). A further short, though unconnected, row of stakes lies further down the interidal zone and may suggest that the two sections once formed a series of weirs as indicated at Waldings Pill (fig.51).

These Woolaston weirs formed part of a larger group of organic structures (figs.53a &b) found by the author within a discrete 40m stretch of intertidal zone to the south of the peat shelf which borders Grange Pill.

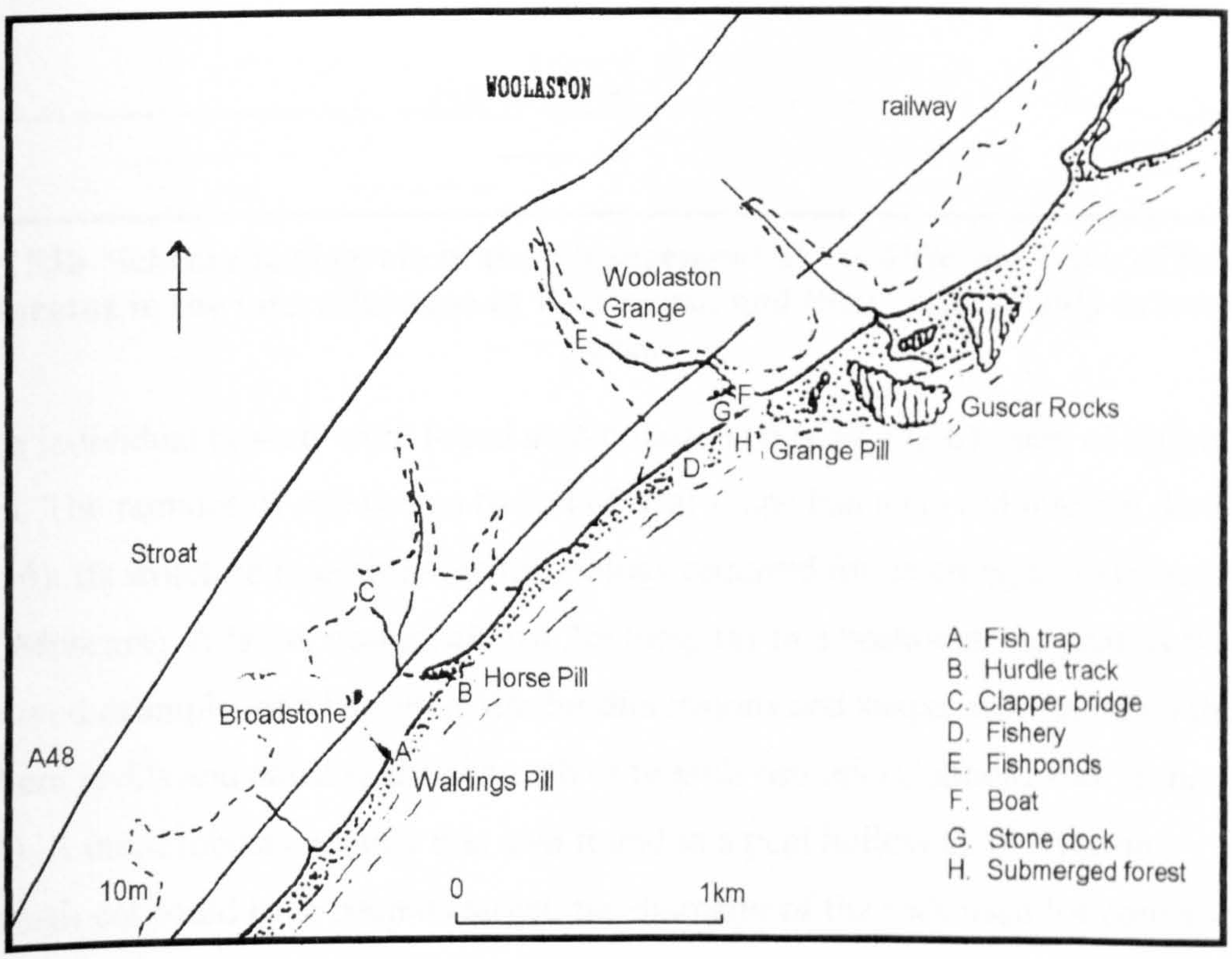


Fig. 53a Distribution of features and structures related to fishing and communication in the Stroat to Woolaston area.

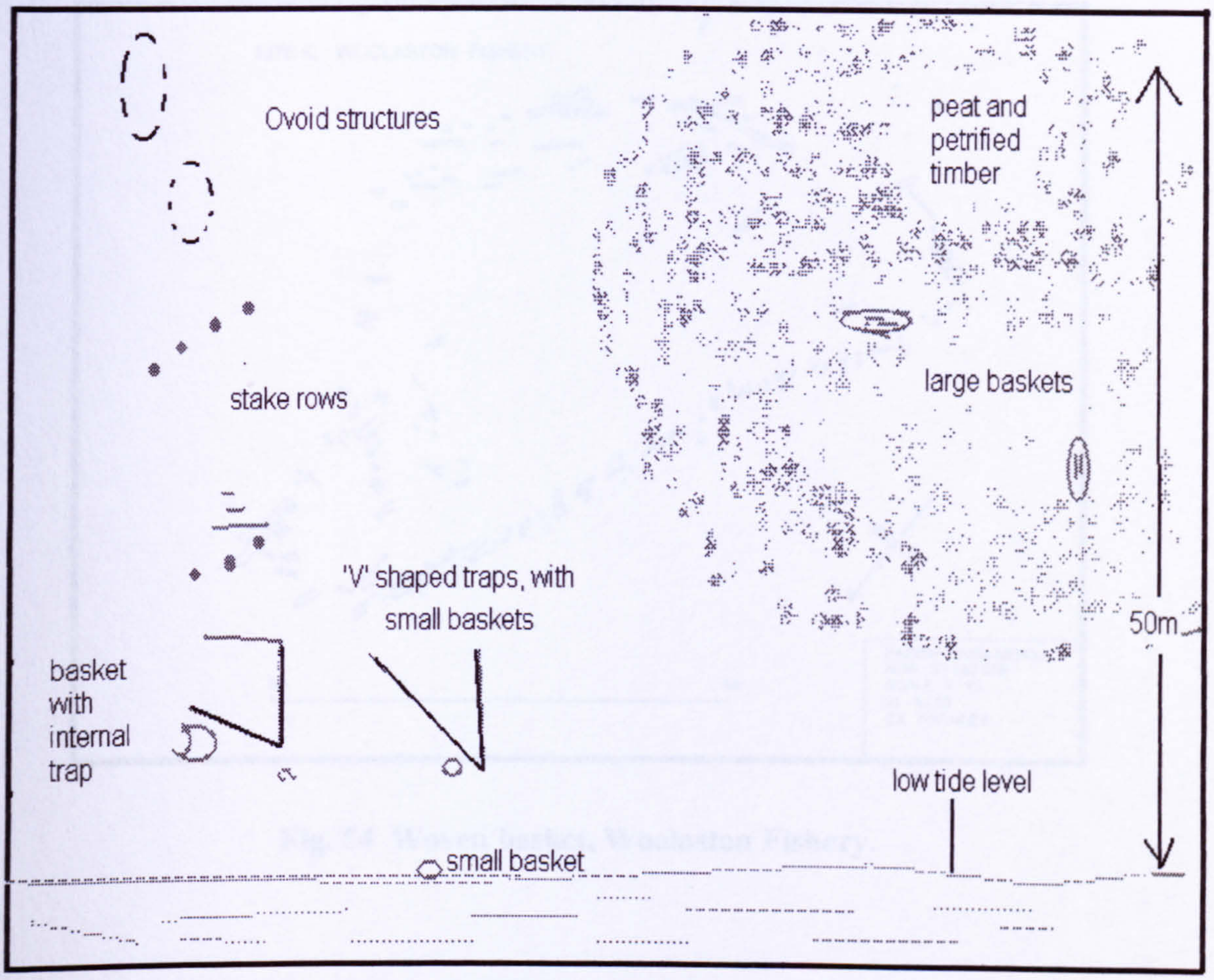


Fig. 53b Schematic diagram of the arrangement of the different types of fishing apparatus in the intertidal zone at Woolaston, and their relationship to low tide level.

Three individual baskets were found at Woolaston (figs.54,55,56), each of different styles. The remains of one woven basket of oval shape had a curved internal division (fig.56). Its structure resembles the technology required for catching eels (Gloucester Folk Museum). A larger basket, almost 2m long, lay in a hollow in the peat. A well preserved example, of a basket of similar dimensions and shape, was found on the Caldicot levels and dated to the eleventh or twelfth century (Godbold and Turner, 1994). A more robust example was also found in a peat hollow at Woolaston.

Although eel could have been its target, the diameter of the rods used for construction is far greater than examples of eel traps displayed at the Folk Museum. Location of the basket would suggest that it was not using the tidal flow for capture and it may, therefore, have been baited - in a habitat ideal for lampreys.

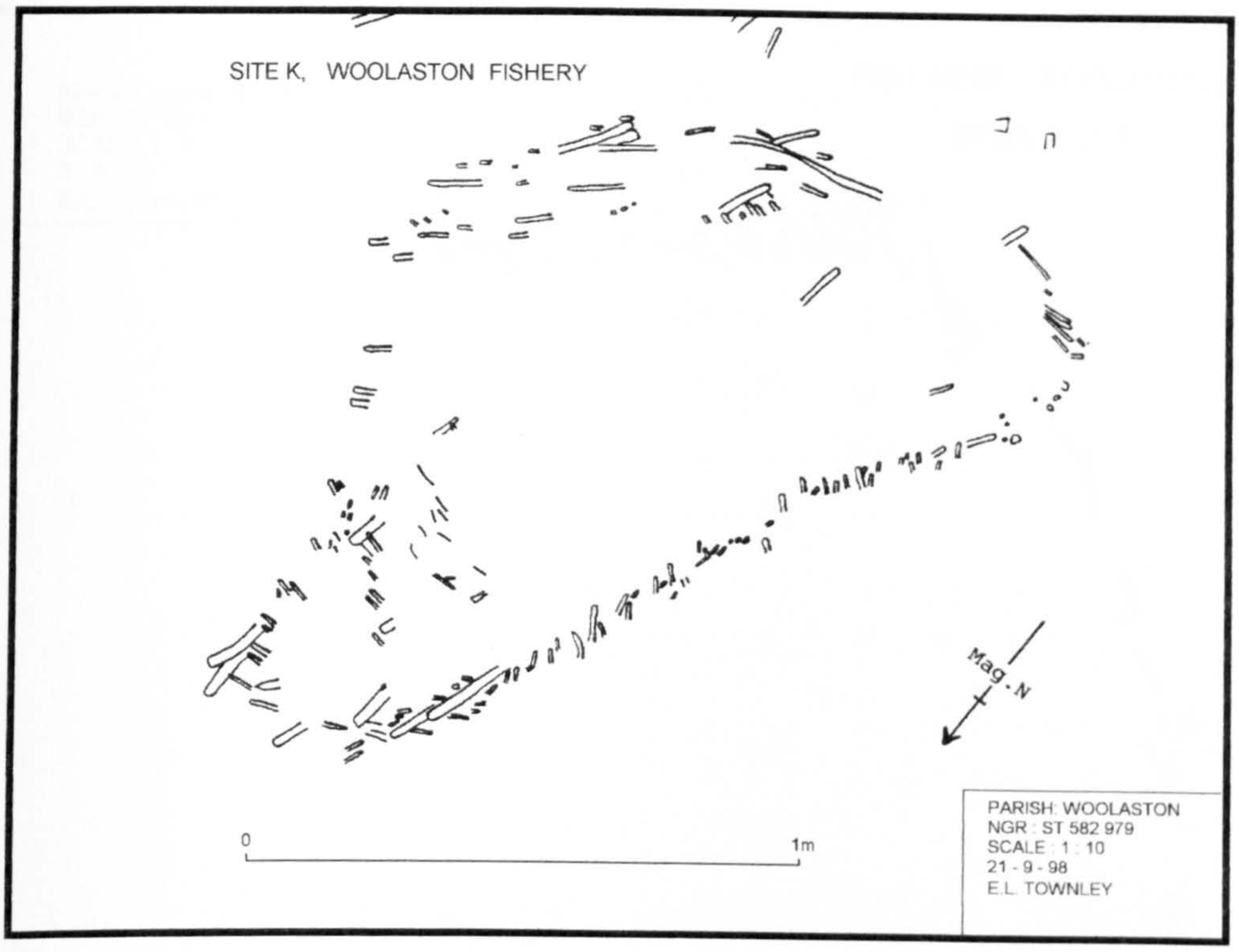


Fig. 54 Woven basket, Woolaston Fishery.

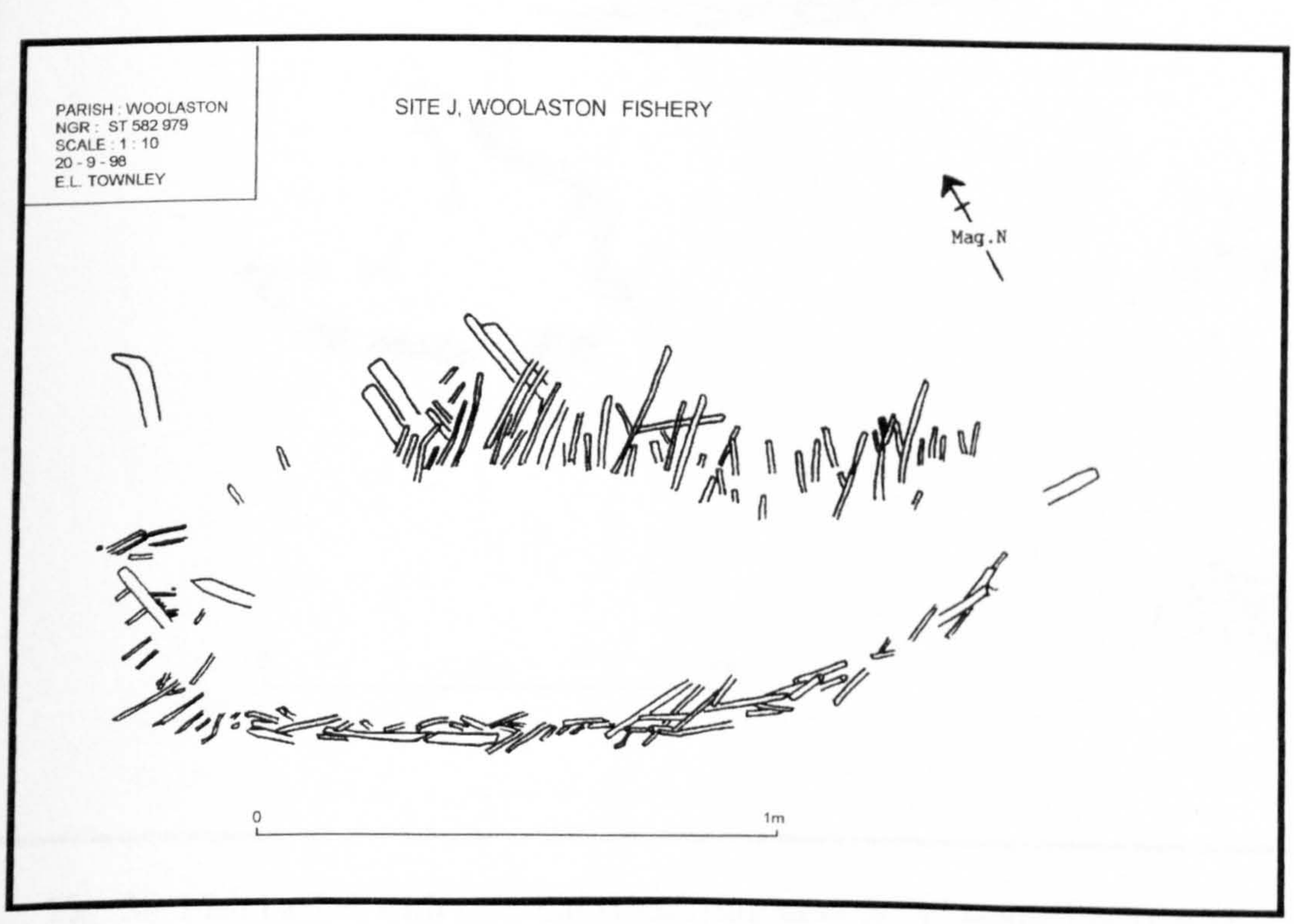


Fig. 55 Woven basket, Woolaston fishery.

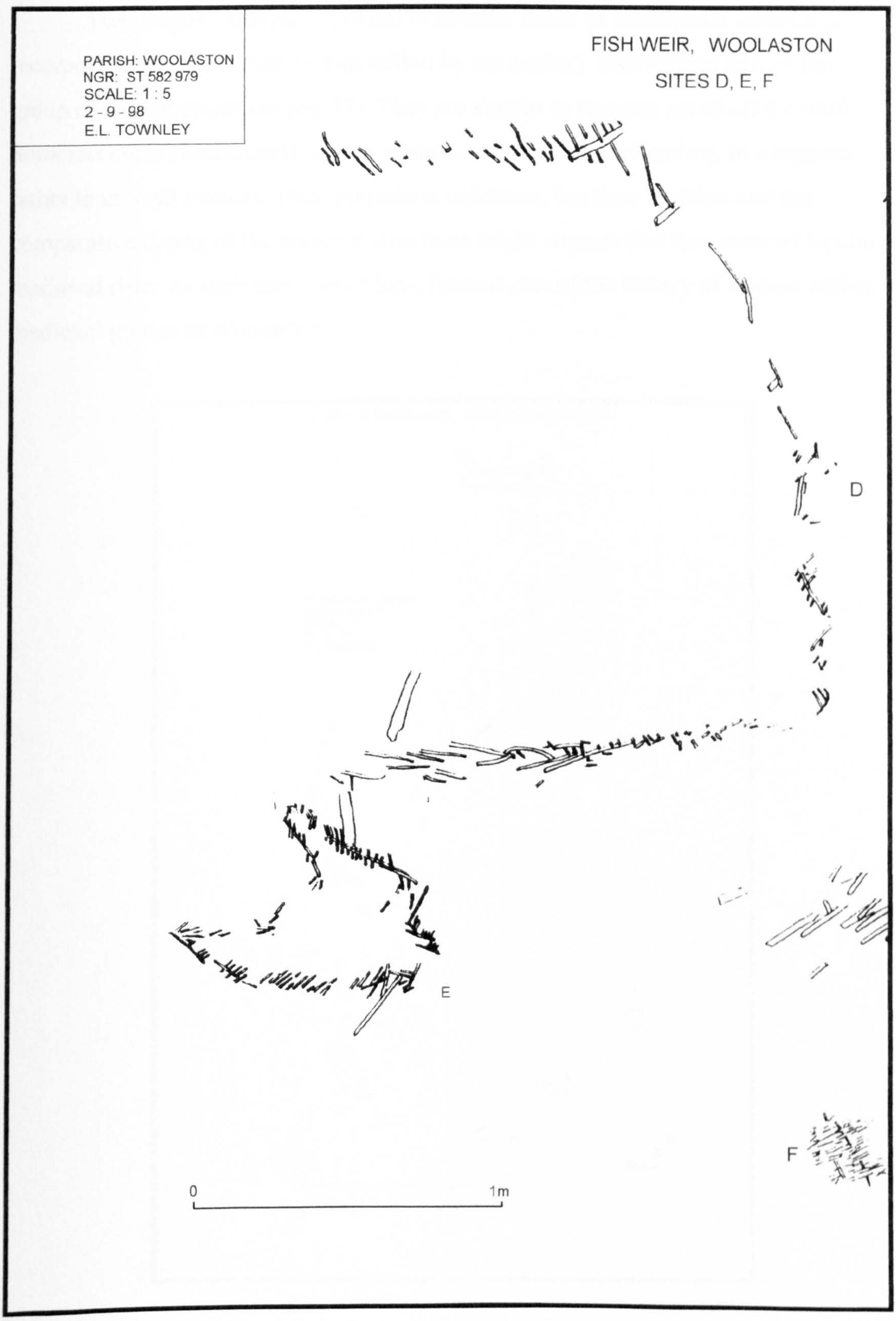


Fig. 56 Fish basket with internal trap, lying next to 'V' shaped weir with detached part of its terminal basket.

Two fragile examples of ovoid structures, made of roundwood stakes and incorporating bracken matting (identified by the author), also formed part of this group of fishing structures (fig.57). They are similar to features noted off the north Somerset coast (McDonnell,R. pers. comm) and place the technology in a regional rather than local context. Their purpose is unknown, but their location and the comparative dating of the adjacent structures might suggest that they were of similar, medieval date. As such they would have formed part of the fishery of Tintern Abbey's medieval grange at Woolaston.

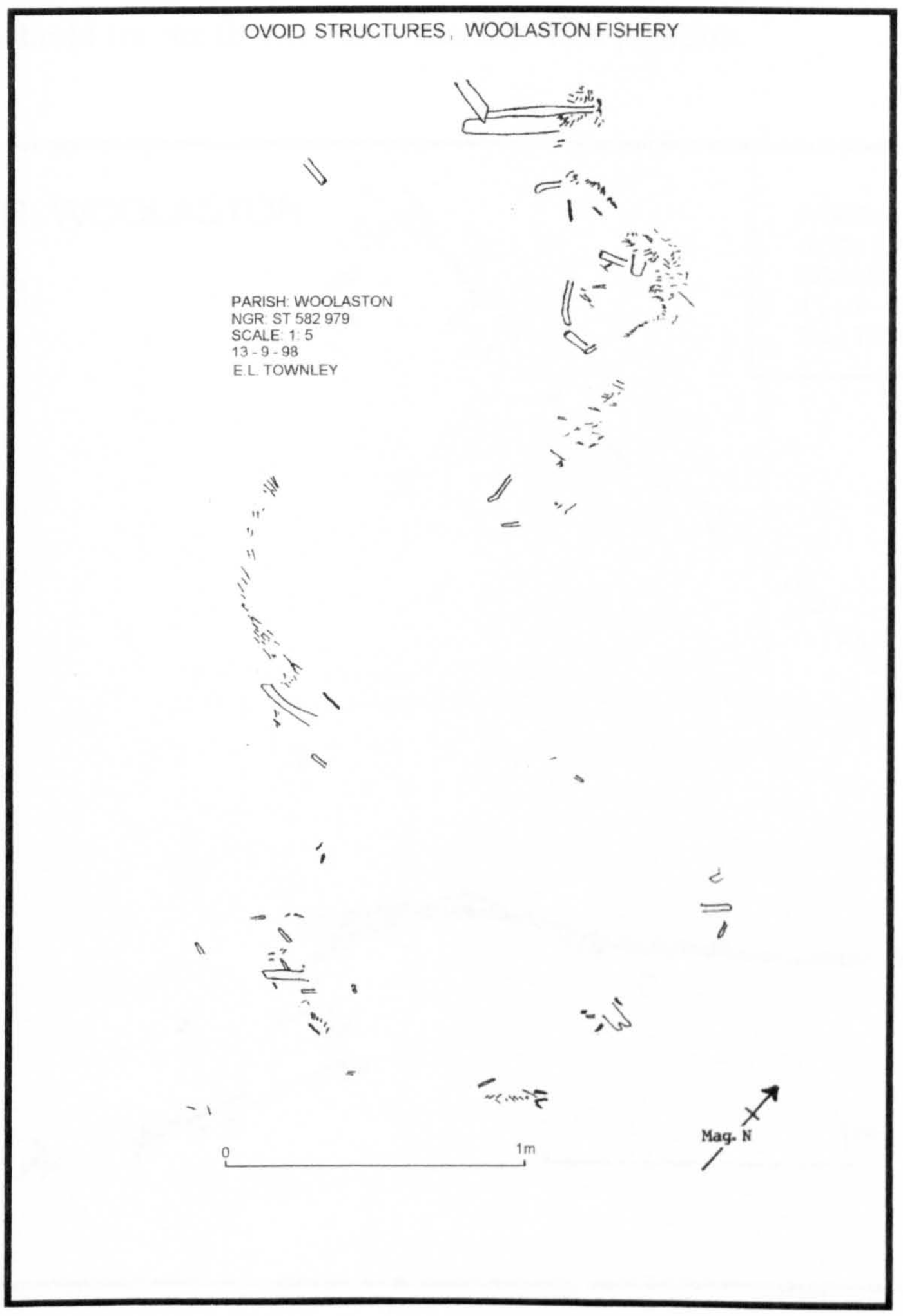


Fig. 57 Ovoid wooden structure in the intertidal zone near Grange Pill.

A further group of wooden structures was found in the same location, although they were placed much lower down the alluvium, close together and very near low

tide level. Their good preservation reveals tripartite structures of wattle hurdling joined to finely woven, short, conical baskets, leading into small very fine baskets (Townley, 1998: figs 2b & 2c). Unlike the 'V' traps they lie parallel to the river with their openings facing inland, away from the ebb tide. The orientation of the baskets may, however, be in response to localised eddies noted by the author in the receding tide. Two, comprising of all the components, lie next to each other (figs, 56,58) with a fallen trunk of the adjacent submerged prehistoric forest lying between them. The third site (fig.59) consisted merely of an end basket, right at the water's edge. This basket was supported on a platform of stakes and rods (some re-used) which also provided a foothold for the fisherman at this low-tide position.

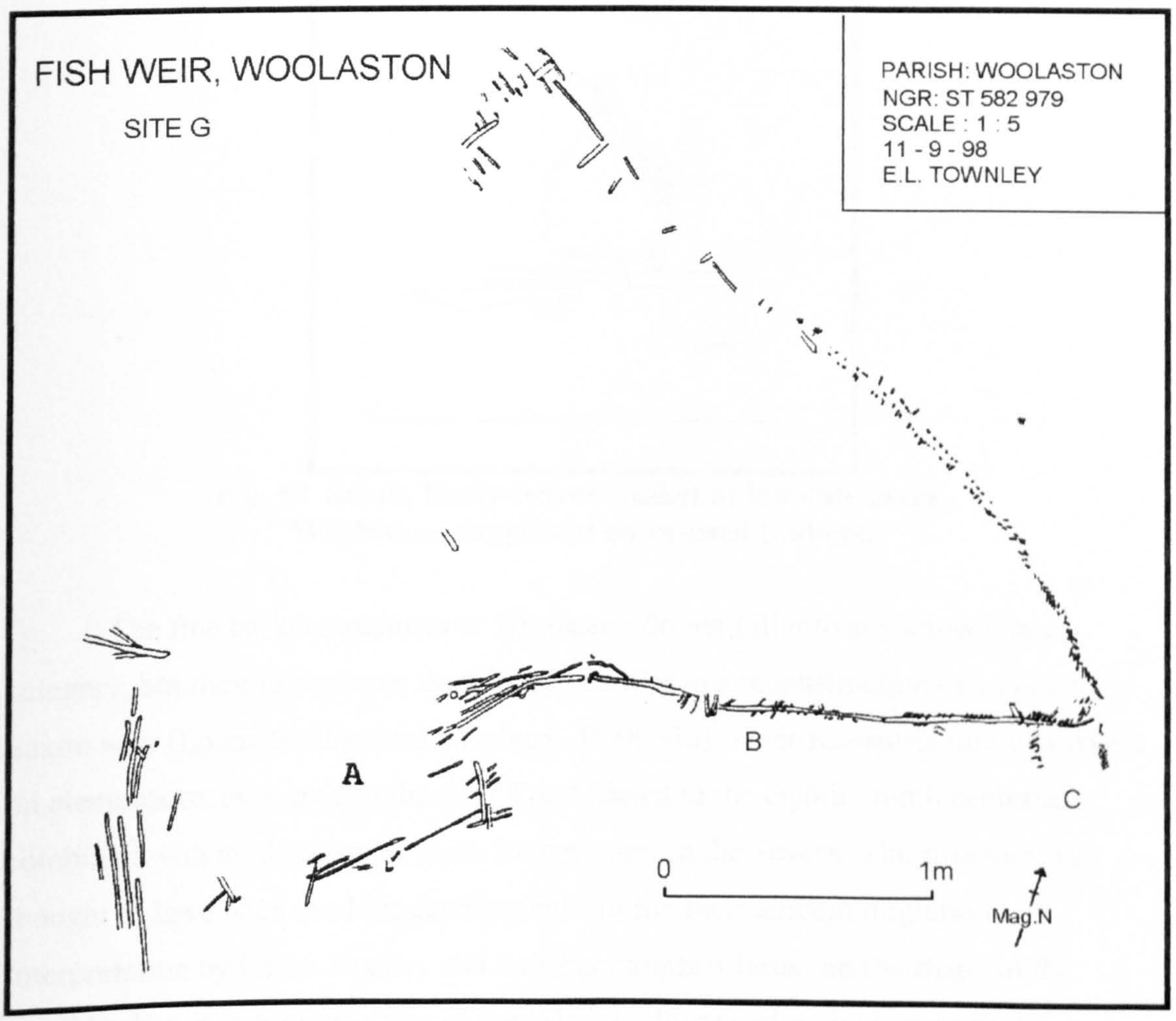


Fig. 58 Proposed Anglo-Saxon fishing weir at Woolaston

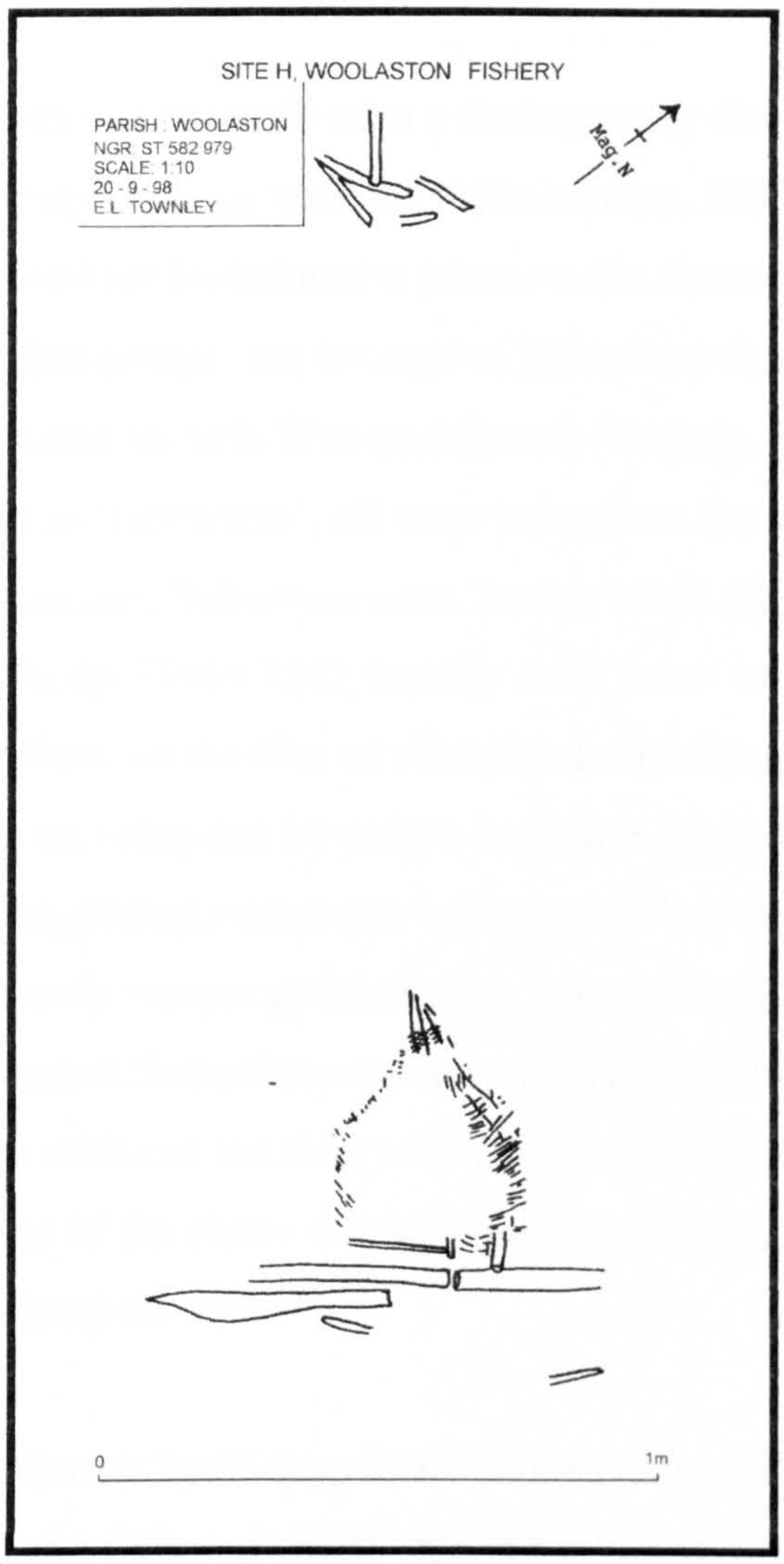


Fig. 59 Small, finely-woven basket at low-tide mark, Woolaston, supported on re-used timbers.

The fine basket structures at Woolaston do not fall into any known local category, but their appearance is strikingly similar to a reconstruction of an Anglo-Saxon weir (Losco-Bradley and Salisbury, 1988:346). Their reconstruction was based on elements recovered from the river Trent (dated to the eighth - ninth centuries) combined with modern, small-mesh baskets used in the Severn. The structure was thought to have been used for catching eels during their autumn migration. Interpretation by Losco-Bradley and Salisbury appears based on the shape of the small basket. It is similar to that of the eel wele illustrated in the Lutrell Psalter (British Library Royal 10 E.1V). Anglo- Saxon fishing structures in eastern England measure several hundred metres long and feed into single baskets (Crump and Wallis, 1992), suggesting either regional variation or a different species involved in the Severn.

Pre-Conquest weirs

The Woolaston structures would conform to a tenth century description of contemporary local fishing weirs as 'cytweras' (Robertson, 1939: 204-5): the name derives from a Celtic word for basket and is preserved in the modern name of 'Chit' Weir on the Wye. The five component tithings of Tidenham worked 100 of these basket weirs in 956, located on both Wye and Severn (Grundy, 1935:248-9). Four further weirs, described as 'hæcweras'; all were located on the Wye. The precise nature of hæcweras is unclear; Robertson uses 'hackle weir' (Robertson, 1939:205), Seebohm translates as 'hedge'(1968:154), Grundy uses 'hatch' or 'floodgate'(1935: 251-2). These are variations on the idea of a barrier designed to guide the fish into a basket, or pool, from which they can be netted. Location suggests some environmental determinant for their use, perhaps related to topography. The Wye is narrower, and its banks have a predominantly steeper gradient than those along Tidenham's Severn shore. In such areas a basket formation may have proved too difficult to install, support or manage. The width of the river offered potential for a barrier which spanned the whole width of the river - a 'hatch' or opening would then be necessary to allow shipping to pass up the river.

The Tidenham charter itself describes the dues required for weir building: '40 larger rods (mæra) or a fother of small rods or build 8 yokes for 3 ebb tides' - (Robertson, 1939:207) - 'yokes' presumably refers to the tapering shape of the cytwera. Seebohm also translates the phrase 'ebban tyne' as a reference to the tide and suggests 'build 8 yokes and wattle three ebbs' (Seebohm 1896:154). These 'ebbs' were proposed as representing three tide heights: spring, middle and neap. This would represent a very inefficient fishing method as those located on the line of the springs would only be operative spasmodically. Similar ideas are, however, still quoted, with a proposed location of the basket weirs at high, low and mid-tide levels (Losco-Bradley, 1988:345).

If not location, the phrase may relate to fishing management. Named tides form part of manorial fishing organisation in the Berkeley Muniments. One tide per week (a Thursday in the Muniments) was called the 'Lord's Tyde' and he was the recipient of the catch. A second tide, on Friday, presumably related to the religious symbolism of the day, was the 'Parson's Tyde' from which the church received its

tithe (Maclean, 1879). The fisherman's own catch would be a third element of distribution. There would, therefore, be three separate designations of tide, possibly the three 'ebbs' of the Charters. This post-Conquest arrangement may reflect earlier practices in the area. Tidenham's charter records that half the catch from each weir should go to the lord (plus any valuable fish such as sturgeon and porpoise or herring or sea fish) and the lord had full control over sales of fish.

Re-examination suggests that 'maera' which was 'problematic and does not occur elsewhere' (Robertson, 1939: 453) is the 'maerum' of later medieval documents, referring to a structural timber or beam - a size far in excess of the roundwood seen in extant local basket weirs. The author proposes that a structure necessitating such dimensions would represent a permanent fixture and would have been able to withstand the tidal flow of a cross-river weir. Maera may, therefore, refer to furnishing the four Wye (hatch) weirs. Ebban tyne may give the timing of the work, which could only take place at low tide. The dues would, therefore, have consisted of provision of materials and construction or repair of the cross-river weirs in the duration of three ebb tides

No organic remains have yet been found in the Wye, although remains of timbers in the mud near Chepstow, identified as piers for a Roman bridge, demonstrate the potential preservation. Medieval fish weir sites, can however, be identified from historical records or extant remains of their stone foundations (NMR Wales: SO 50 NW 10, ST 59 NW 15,16 & 17, SO 50 SW 16,17, 18,19 & 25, ST 59 NW 17,18,19). These can either be seen at low tide, or indicated by surface rippling as the current passes over the submerged rocks, as at Plumweir (ST 538 997) and Stanweir (SO 529 004). Unlike cross-river weirs seen in the Severn, such as at Preston (Pannett, 1988: 372) the Wye weirs do not have a linear pattern, but consist of a series of 'V' shapes -a similar pattern to the wooden ones noted on the Severn shore (above). They may, therefore, be considered as part of the same regional pattern but with an adaptation to withstand the tidal thrust in the narrower channel.

'Plumweir' and 'Stanweir' (sometimes referred to as Stoweir or Staweir) are thought to have been the weirs granted in the sixth century to the see of Llandaff (*Liber Llandavensis*: 393). They lie below a proposed seat of Welsh kings at ST 530

990 (A. Eden. pers. comm). 'Ithel's weir' upstream also bears the name of a contemporary Welsh king. Construction of a weir which spanned the river would assume initial ownership or control of both banks and such gifts were in the hands of the king at that period. Later examples of ownership of half a weir are assumed to represent the sharing of an existing structure with the centre of the river marking the boundary (Wood, 1922:83). A 'half weir' has also been proposed as a separate category, associated with stop netting (Putley, 1999:60). Putley describes the half weir as a natural or artificial construction running out from the bank; it would create strong eddies round the end of the structure and a backwater behind it (on the upstream side). Fish could be netted in this backwater.

The archaeological remains of Plumweir (Pl.20) demonstrate that this weir spanned the river and, therefore, that the model of half-ownership is more likely to have applied in the Wye - with only part ownership of the weir transferred to Tintern Abbey in 1223 (*Monasticon Anglicanum*, Vol. 5: 267). The Abbey lay on its western end but the Domesday ownership associated the fishery with Madgetts, an area high on the eastern plateau (Morris, 1982:1.64). It was connected by a steep path down Plumweir cliff - presumably the source of the weir masonry. Madgetts is proposed as an eighth century settlement within an assart (ch. 4). It may represent Anglo-Saxon colonisation of an area which had been originally designated for furnishing the weir - later grants of weirs were given with such land grants for their upkeep. The high cost involved in construction and maintenance of such a large permanent structure would represent status. It could explain the low ratio of 1:26, of hæcweras to basket weirs, in tenth century Tidenham. Their distribution restricts them to tithings which either supplied the king (Cingestun) or a religious house (Lancaut) both of which may have been able to fund large structures. The greater dimensions of cross-river structures should have produced proportionately larger catches and return for the investment.

Domesday fisheries

Comparison of the values of Domesday fisheries in the Wye with those in the Severn does suggest a difference. A Wye fishery belonging to Wyegate (near Bigsweir) was worth ten shillings, in comparison with only five shillings for a fishery on the Severn at Woolaston (Morris, 1982: 31.4, 31.5). Two Severn fisheries at Tidenham (in association with one and a half virgates) were valued at ten shillings which would

give a similar individual value as Woolaston (Morris, 1982: 31.6). One at 'Alverston' (Brookend) on the lowest edge of the Lydney embayment was worth only twelve pence (Morris, 1982: 31.2). Lydney itself had no recorded fisheries which may reflect its position as something of a backwater, sheltered by the Guscar rocks and the Naas promontory. The area between the Naas promontory and Awre had two fisheries (Morris, 1982: 1.13, 1.54). Local topography would have enabled basket weirs to be installed on a gently shelving intertidal zone close to the main river currents. Although these particular fisheries are unvalued, the pattern suggests consistently lower values for individual Severn fisheries.

Density of fisheries in Tidenham would, however, reflect the continuing importance of the industry in this peninsular area. It was the Severn shore of Tidenham which retained its tenth century weirs: fifty six and a half weirs were recorded at Domesday out of an earlier one hundred and four, but only three and a half of these were now located in the Wye. Changes had also been made in ownership, with forty four and a half fisheries now in the hands of villeins (Morris, 1982: 1.56) - six more Severn fisheries were held separately by lease 'to Archbishop Stigand' (Morris, 1982: 31.6. 39.11).

Changes in the Wye may have been linked to political border problems - Tidenham had been sacked by the Welsh prior to Domesday (ch.4). Forty weirs in this river had decreased to only three and a half, but Chepstow's Domesday entry also notes tax on boats 'going to the wood' (up the Wye) (Morris, 1982: S1). An increase in river traffic may have competed with fishing interests in the narrower river channel, and caused a contemporary decline in its fisheries. The component vills of Tidenham's tithings all had access to both rivers and individual owners may have concentrated their investment into areas where there was less conflict. A declining Wye industry is, however, incompatible with the fact that Earl William (of Hereford) gave half a fishery in the Wye plus two in the Severn to Walter de Lacy (Morris, 1982: 1.56). The name 'Walter's Weir' survives at ST 538 960 and suggests a location for the Wye weir. It is located, like the 'hæcweras', on the Lancaut peninsula. Two further Wye fisheries were given to Ralph of Limesy (Morris, 1982: 1.56) but seven more fisheries are recorded as in the possession of Earl William - although these are divided between the Wye and the Usk (Morris, 1982: S.2). A later entry (W.16) mentions three further

weirs in the Wye around Chepstow valued at seventy shillings. The local Wye fishing industry at Domesday appears to have been, like shipping, oriented towards ownership from the Welsh side, and elite ownership may have concentrated fishing methodology into prestigious 'hatch weirs' at the expense of the less efficient basket type.

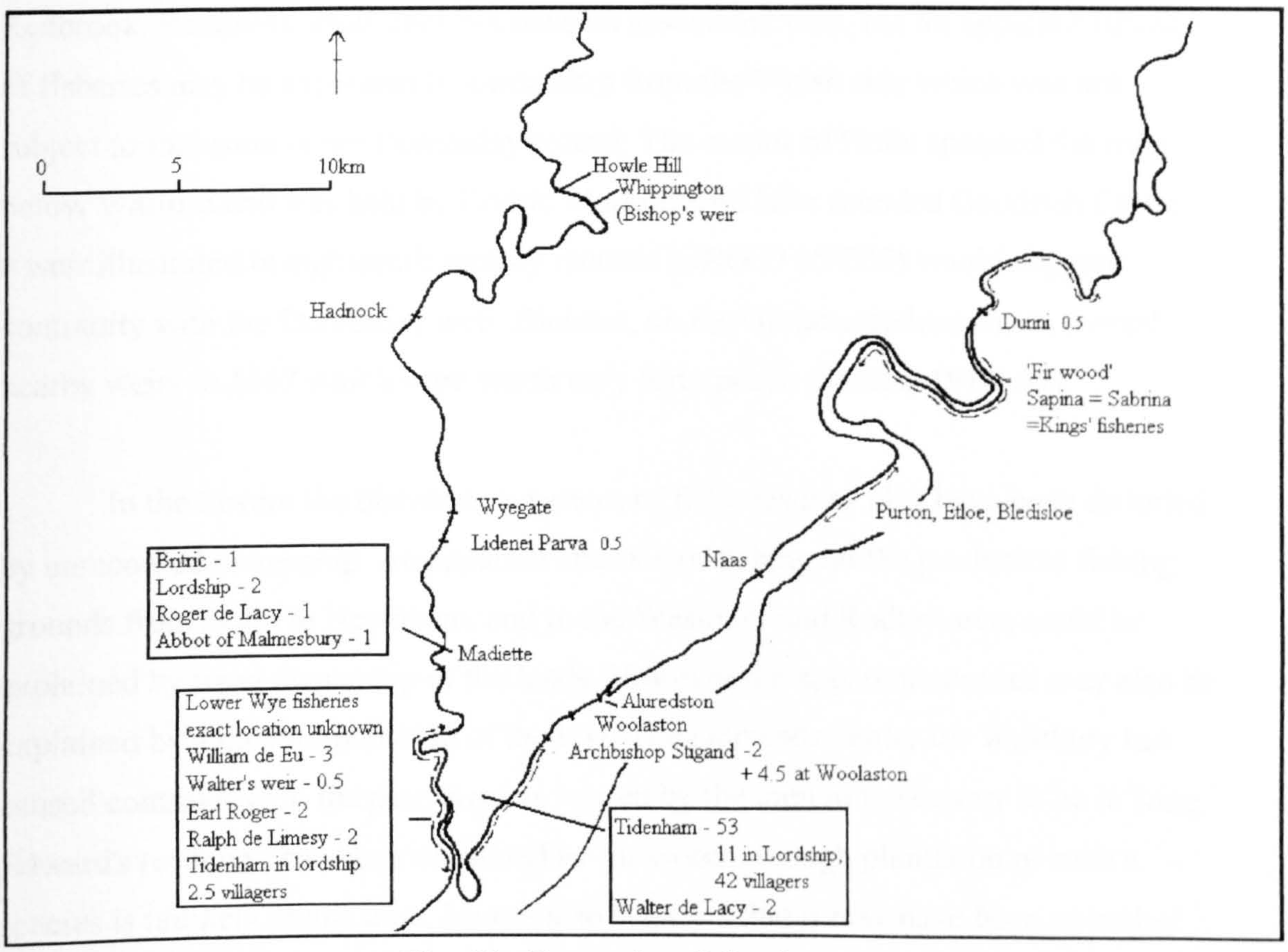


Fig. 60. Domesday fisheries

Further up the tidal reaches of the Wye Domesday fisheries belonged to the manors of Lidenei Parva (St. Briavels), Wyegate and Madgetts (fig.60). At Madgetts land-ownership produced three shareholders in its weir, although all were claimed by the overlord de Eu (Morris, 1982: 1.64). Lidenei Parva (32.11) also held only half a fishery: it would seem to have been located at Brockweir and was later claimed by Monmouth Priory on the grounds of ownership of land in the vill - the fishery would have been accesible by holloway from the south of the vill. That would leave the Bigsweir valley free as the location for Wyegate's fishery. Wyegate (31.4) had been left for waste on its 'return to the Forest', but in spite of its non-functional role the land retained its fishing rights. A location within the productive tidal range would make it worth its ten shilling valuation.

Above Lydbrook, the unvalued Whippington fishery was also attached to three hides of Forest waste in 1086, belonging to the Bishopric of Hereford - later known as Bishop's weir (Morris, 1982: E6). By 1282 it was used by the Augustinian Canons of Llantony Prima who kept a boat there in addition to one at Hadnock (Hart, 1955). This would imply a different method of fishing in the freshwater reaches above Redbrook. Redbrook itself does not have an associated weir, but an apparent absence of fisheries may be explained by ownership from the Welsh side which was not subject to inclusion in the Domesday record. The manor of Hulle spanned the river below Walford and was held by Godric Mapson who later founded Goodrich Castle - a weir illustrated in eighteenth century records (GRO D 25/E35) would suggest continuity with the Domesday weir. Bicknor, on the Gloucestershire shore, owned nearby weirs in 1367 which were worth only forty pence (Stokes, 1914: 44).

In the Severn the distribution pattern of fisheries may also have been distorted by unrecorded ownership. An apparent absence of fishing on the productive fishing grounds from Bullo to Newnham, and in the Westbury and Rodley area, could be explained by royal ownership of the lands. However the apparent absence may also be explained by a misinterpretation of the text. The Domesday entry for Westbury has caused controversy in the past. *Sapina*, 'stated by the men in the county to be in King Edward's revenue', has been translated as 'fir wood', though plantation of such a species is unlikely at this time. Morris also suggests that it may have been an earlier mistranscription of Sapian, from a place (Sapey) in Worcestershire (Morris, 1982: n1,11). Use of a capital letter does suggest a proper name, but given the known placement of Westbury and its riverine connection, perhaps any mistranscription was from Sabrina, the Roman name for the Severn. This would then read that 'the Severn (and its produce) in Westbury was in King Edward's revenue'. This large hundred stretched from Bullo round the Rodley peninsula and almost to Gloucester, giving an extensive river frontage.

Post-Conquest weirs

Property at Rodley, given to Milo, Earl of Hereford, 1143-49 (GRO. D 2783) included 'a free stake in the fishery of Gerna' which extended across to Framilode from 'Hukkeleia?' the latter presumed by the author to have been lost through later erosion (fig.14). Garne, on Cleeve hill derives from the Anglo-Saxon word for 'traps'. Further

east 'Heilith', on the 'Heidun' (Hayden) promontory, had a fish house into modern times, retaining access to the river in spite of a pattern of local land reclamation (tithe map). It would suggest that settlement on the two spurs had originated from their fishing potential. A similar situation may be seen for 'Duni'. Modern Denny Hill and Duni Farm stretch from Walmore towards Minsterworth, suggesting the extent of a fishery, again based on this raised area within marshland. Duni has been identified as the location of the Domesday-'half a hide of land with a fishery in Westbury hundred' on the evidence of its ownership by William Goizenboded, the successor to the Domesday owner Alwin the sheriff (Moore, 1982: n34,12). It would seem a plausible identification given the continuity of a fishery there from at least 1150A.D. when it was given to St. Peter's Abbey in Gloucester. The association of small land parcel to fishery suggests a similar pattern of organisation to that noted, by the author, at Tidenham.

Tidenham's thirteenth century manorial fishing interests continued to focus on the Wye. The Tidenham Ministers accounts of 1269 record fifteen shillings three and a half pence in the 'hayward renders' from sale of salmon and other small fish (SC6/859/17) and 'Berigeriwere', in the lord's hands, bringing in five shillings. In 1296 fisheries of 'Manwere', 'Benygereswere' (at Ban-y-gor rocks) and 'Ithelswere' were included. By 1306 the lord's fishery lay beneath Chepstow castle with fifty nine separate fisheries held by tenants (Fry, 1910: 49-73). The numbers are consistent with Domesday's fifty nine weirs in the Severn and three and a half in the Wye for Tidenham. This number also correlates to weir number in the tenth century charters, suggesting a high degree of continuity in fishing sites over four centuries. The Anglo-Saxon industry may, therefore, have already been working at maximum spacing for productivity in this stretch of the Severn.

Access

All owners would have needed access to work their weirs. Field evidence suggests that holloways which lead to the river - such as from Tidenham (ST 559 958) or Stroat (ST 572 977) - may have fed into a route along the river margin. Maps of 1777 (Bristol and Gloucester Archaeological Society, 1987: 11) suggest that bridges crossed the streams which led into the river at a point just below the 10m contour, many now with modern counterparts. A clapper bridge at Mickla (SO 000 608) has

been much adulterated to facilitate modern farm use, but links tracks from Alvington to a green way leading towards Woolaston. It is dated to the Anglo-Saxon period in the Gloucestershire SMR. A causeway can be seen near Ley Pill and stones, noted by the author, in the stream bed south of the modern bridge across Grange Pill (ST 592 983) would suggest the presence of a ford. Further south a clapper bridge was found and excavated by the author at Stroat (ST 577 974). Four weighty limestone slabs (matching the geology on the hills above) lie over a silted stream supported by piers (fig.61, Pl.21). Its structure and location appear similar to a further example whose remains were found near an abandoned channel at Poulton (SO 698 073), the bridge itself having been destroyed by the farmer in 1990. At Stroat the west/east orientation of the bridge is incompatible with access to the nearby standing stone, 'The Broadstone', but leads towards Grange Pill and the headland where Iron Age and Roman pottery and slag have been noted (Walters, 1992:51). It would have facilitated access to fisheries at Woolaston proposed as belonging to Stroat tithing (ch. 4). To the west the route would have joined to a greenway under the (inland) cliff at Hanley Hill and on to Tidenham.

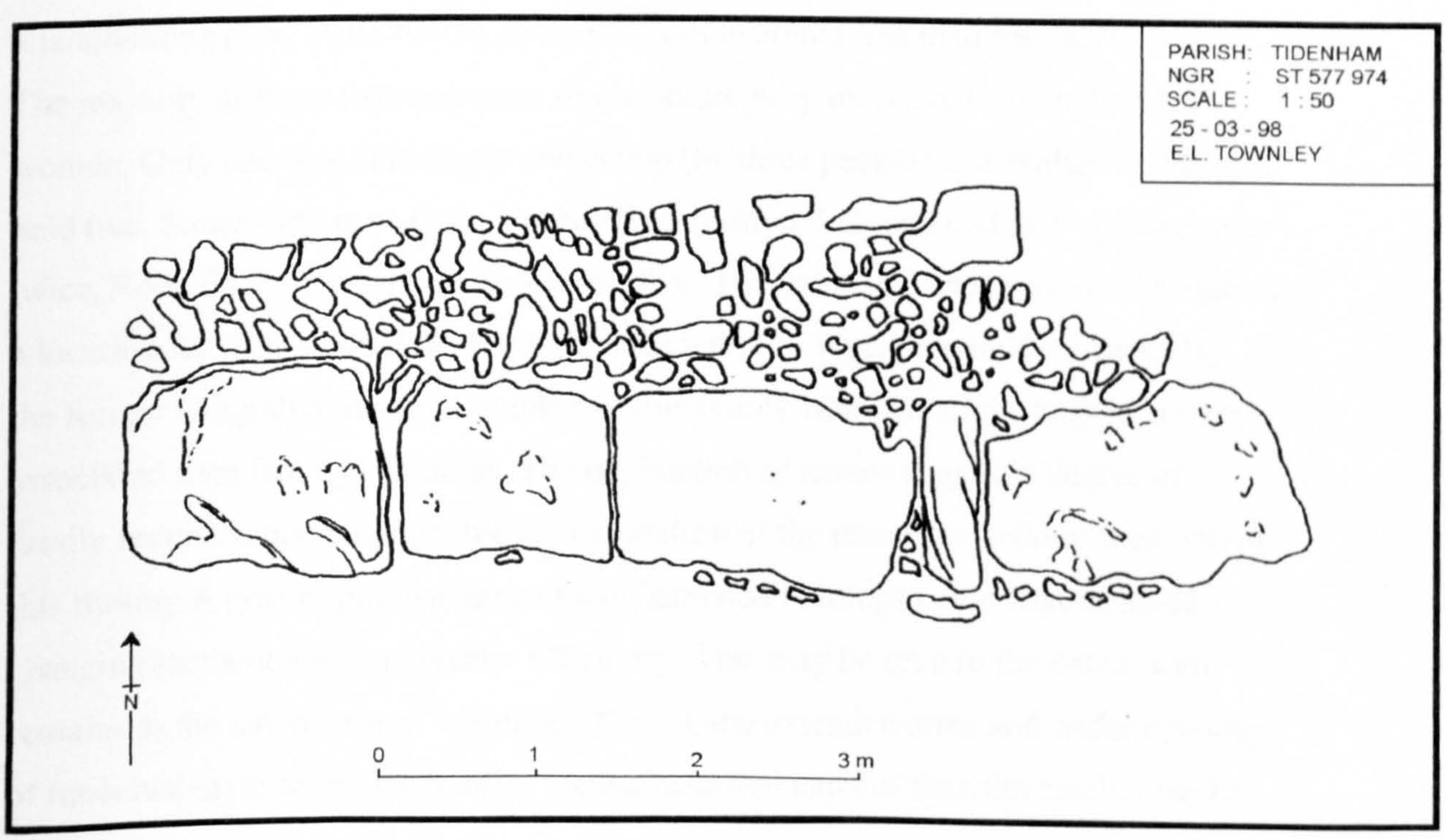
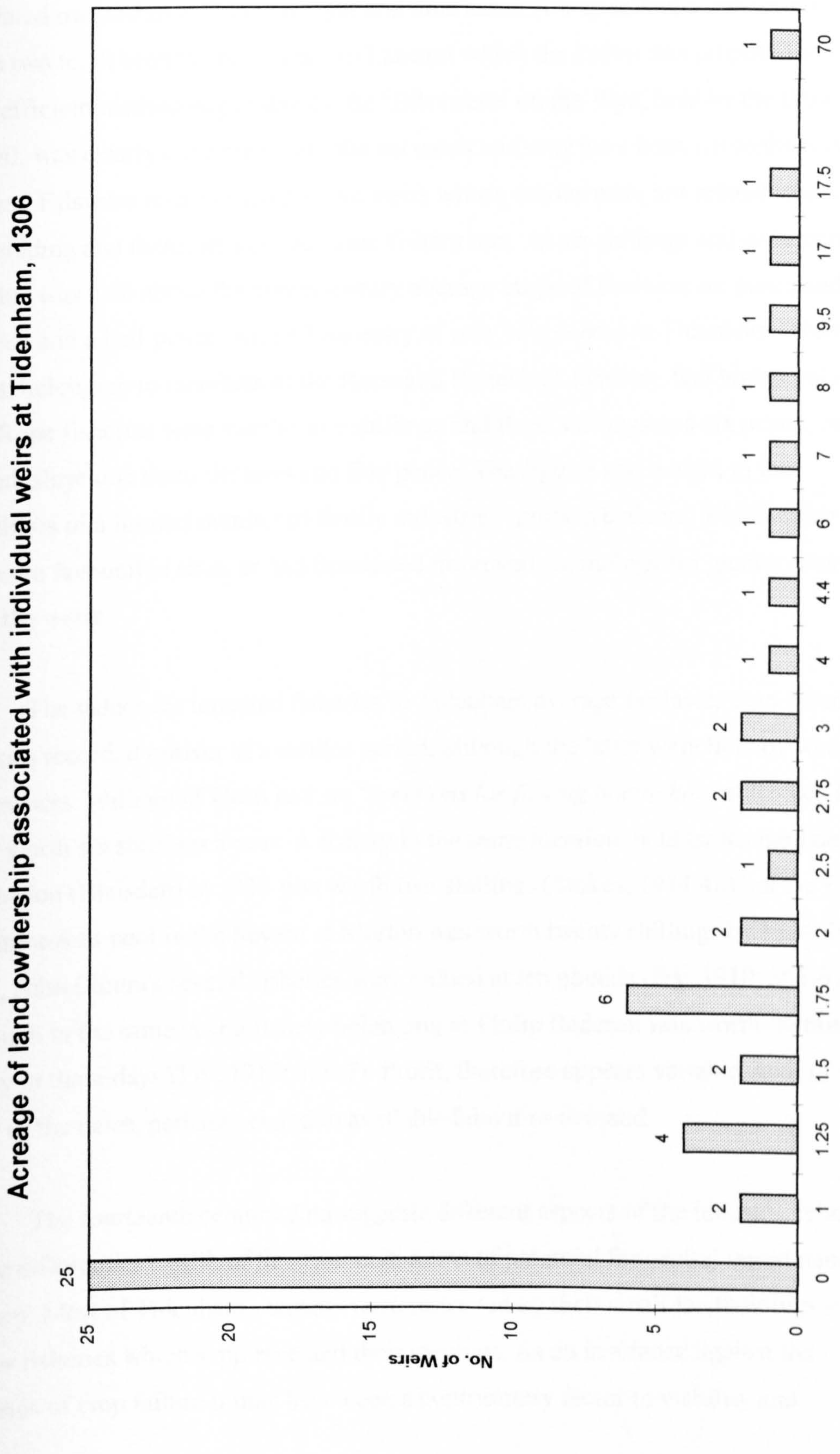


Fig. 61 The clapper bridge and cobbled roadway at Stroat.

Together all the structures and landscape features suggest an earlier version of 'the Severn Way'. Such a route would have enabled the river to have been worked in its entirety, rather than simply round the nodes where the holloways met the intertidal zone. Within the intertidal zone itself access across the mud may have been facilitated by wooden trackways. Two were found by the author at Stroat (ST 579 969) and near Cone Brook (ST 612 992). Both are of re-used wattle hurdle construction pegged into the mud by forked branches. Sections of the Stroat track extend some 30m from beneath the mud cliff, which edges the modern field, to an eroding mud cliff into the river channel. Although undated it may mark the site of a former fishery. Unlike the Wye, the fisheries in the estuarine Severn have no names and their locations cannot be easily identified.

Fourteenth century fishing

Tidenham, as part of Striguil, lay in the March. This was an area where peasant holdings remained notably small, with an emphasis on rental income (Davies, 1978: 393). All the fourteenth century fisheries were held by free tenants. Examination of the records by the author found that, where fisheries were recorded in association with a landholding (Fry, 1910:49-73), almost 50% constituted less than four acres (fig.62). The majority of these fisheries were single holdings by individuals, including six women. Only one was in multiple ownership (by three people) and Walter Walding held two. Some surnames: Cole, Vache, Trut, Martyn, LeFrend and de Rugelin appear twice, Rope three times and de Bettesleye five. The name de Bettesleye would suggest a location for their weirs near the confluence with the Wye, near modern Beachley, the former Cingestun. It was a member of this family who owned the largest holding associated with fishing - 70 acres. The duplication of names suggest a degree of family specialisation and possible agglomeration of the numerous fishing sites within this tithing. A greater physical area of amalgamated holdings could have enabled changing methodology and greater efficiency. This may be seen in the extant weir remains at the sub-manor of Waldings (fig.51): the extended arms and wider opening of medieval-style weirs would offer greater potential catches than the smaller basket weirs.


Acreage of land ownership associated with individual weirs at Tidenham, 1306
Acreage
No. of Weirs
25
20
15
10
5
0
2
6
2
2
1
4
2
1
1
1

The two weirs recorded for the hamlet of Lancaut seems a low number in respect of the long river bank which encircles the Lancaut peninsula, though associated ownership is larger, at eight and nine acres. It may reflect a concentration on the two tenth century 'hæcweras' in Lancaut which the author has proposed as a more efficient methodology (above). An 'Eileswere' on the Wye, held by the Prior of Striguil, was clearly concerned with the eel catch and may have been Liveoaks weir at Lancaut. Eilswere is one of twenty five weirs whose entries were not related to any land holding and therefore gave separate fishery rent. At six shillings and eight pence its value was well above the contemporary average range of between six pence and fourteen and a half pence (with a lone entry of only two pence) in Tidenham. Three others, belonging to members of the Rope and Bettesleye families, had higher values. Two Rope fisheries were worth three shillings and three shillings and six pence, the de Bettesleye one three shillings and five pence. The figures add weight to the hypothesis of a limited number of family industries (proposed above) which either had more favourable sites, or had developed improved technology for greater returns from the weirs.

The values for tenanted fisheries in Tidenham average far lower than values of fisheries recorded upriver at a similar period, although the latter were held by wealthy landowners. William of Dean had six '*erections for fishing borrachae*' at Rodley in 1319 worth six shillings a year. A fishery in the same location, held by Richard de Blechedon (Blaisden) in 1326 was worth two shillings (Stokes, 1914:48) but the Earl of Pembroke's pool in the Severn at Morton was worth twenty shillings by 1324. In 1358, John Blount's several fisheries were valued at ten pounds (Fry, 1910: 365-6) although in the same year a fishery belonging to Philip Baderon was worth 'nothing yearly in these days'(Fry, 1910: 326-7). Profit, therefore appears variable, and, in view of the dates, perhaps related to available labour or demand.

The fourteenth century data suggests different aspects of the industry, related to the differential wealth of the owners in terms of potential for capital investment and upkeep. Most of Tidenham's tenants were restricted by their small landholdings to minor fisheries which supplemented their incomes. As an insurance against the vagaries of crop failure it may have been a contributory factor in viability and

maintenance of a landscape of numerous small-holdings. A few larger landholders had the resources to construct and maintain larger weirs for correspondingly increased catches and profit. Overall control in the Wye was exercised by the lords of Striguil. As benefactors they were in a position to determine siting and ownership of weirs, which in the Wye became dominated by monastic ownership, particularly Tintern Abbey.

Monastic Fishing Interests

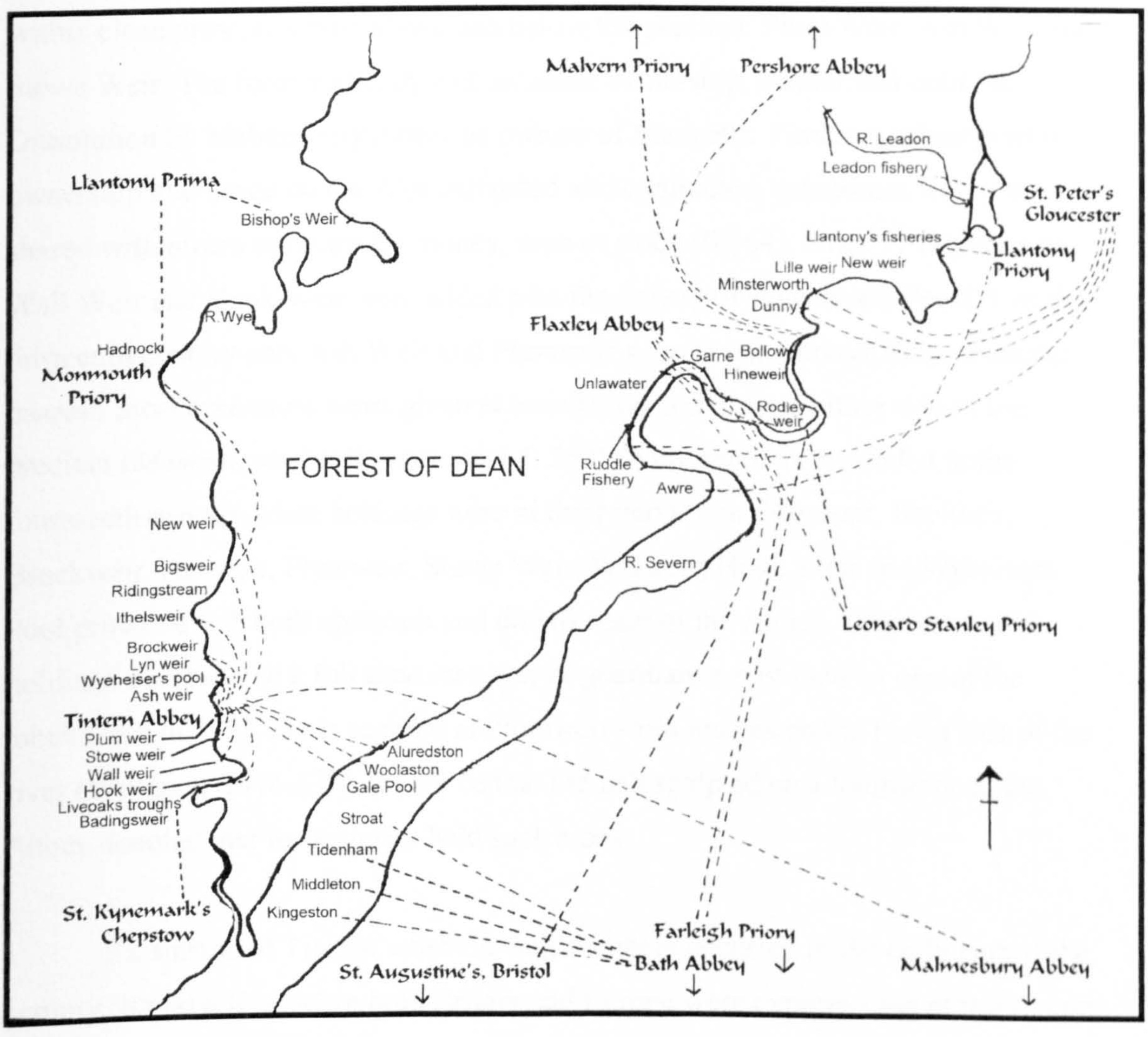


Fig. 63 Monastic fisheries in the rivers Wye and Severn.

As founders and patrons, first the de Clare family, and then the Bigods, gave Tintern Abbey domination of fishing in the lower reaches of the Wye - an exception being Chepstow Priory's ownership of Liveoaks weir. Toll-free access was given to the monastery on both rivers and acquisition of Aluredston (Brookend) near the

Guscar rocks also gave right of wreck in the early fourteenth century. This was in addition to the right to make weirs and engines there for fishing. 'Water and fish and suit of his men from pont Striguil by circuit of Wye and Severn to Twyford (modern Woolaston parish) and so on to the other side by the Chase as far as the said bridge, plus half of Ash Weir' was given in 1307 (Williams, 1984: 322,330) - Abbey fishing rights therefore extended right round the lower Forest of Dean from Bigsweir on the Wye to the confluence of the rivers and up to Cone Brook on the Severn (fig.63).

This domination had grown from a foundation grant of three weirs in 1134, all within close proximity both above and below the precinct: Plum Weir, Ash Weir and Stowe Weir. The former already had monastic ownership, maintained until the Dissolution by Malmesbury Abbey as owners of Madgetts. Tintern's subsequent weir ownership and usage on the Wye expanded and contracted, sometimes leased out or shared with others in return for money, corn or stock (fig.64). After 1148 shares in Wall Weir and Hook Weir were added plus the fishery of Wyeheisers Pool(?). In the thirteenth century only Ash Weir and Plumweir were being worked; these were the nearest, most accessible weirs given at foundation and located either side of the precinct (*Monasticon Anglicanum*, Vol.5: 267). Weir numbers expanded in the fourteenth century when holdings were at their maximum. Bigsweir, Ithelweir, Brockweir, Ashweir, Plumweir, Stowe Weir, Walweir, Hook Weir and Wyheisers Pool provided fish both upstream and downstream of the Abbey. The extent of the holdings necessitated a full time manager or guardian, a post held by one of the monks, but in 1323, debts accrued at Plumweir from lessees on the Forest side of the river (Williams, 1976:139). It may be that the fish sculpted on a tombstone at the Abbey denoted that its occupant held such a post.

Expansion of Tintern's fishing weir numbers occurred in the early part of the century. It was a time when both Britain and Europe were experiencing murrain, crop failure and famine, caused by incessant rain. It would seem likely that 'intermediate forms of exploitation' (Williamson, 1997) which harvested natural resources were being harnessed to compensate for terrestrial failures - the product would not be affected by the contemporary climate. Tintern's expansion was not only in numbers of weirs but also in their scale. A court case in 1332, brought by the Duke of Monmouth,

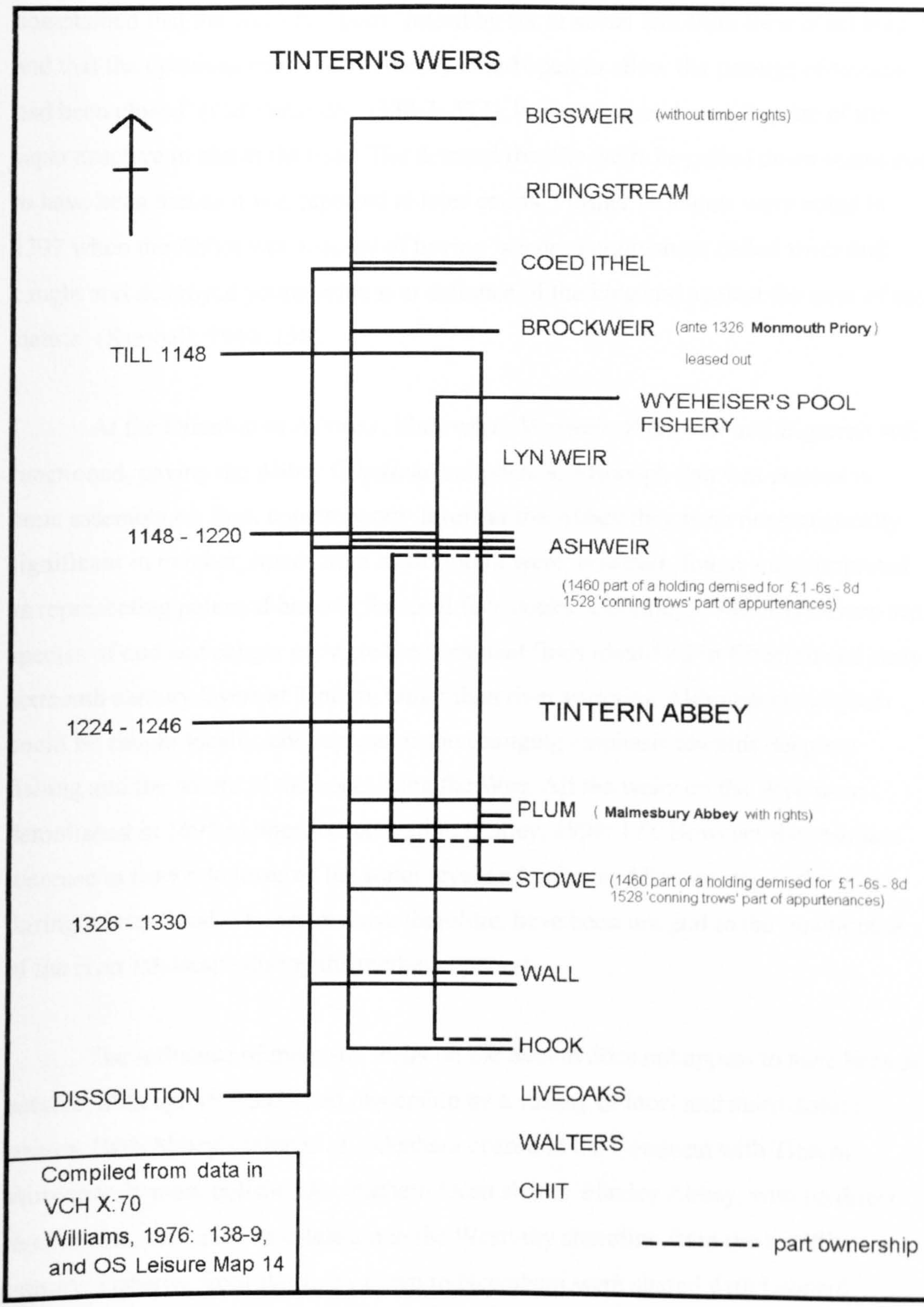


Fig. 64 Post-Conquest monastic fisheries in the Wye.

complained that the weirs had been 'raised by six or seven feet from their usual height and that the openings which had formerly stood open to allow the passage of vessels had been closed' (*Cal.Pat.Rolls*, 1330-3: 572). It gives some idea of the size of the superstructure in situ at the time. The demand that the weirs be pulled down seems not to have been met as it was repeated at later courts. Further problems were noted in 1397 when the Abbot was accused of having 'sundry connivances called wiles and caught and destroyed young salmon in defiance of the king and against the term of the statute' (Kimball, 1940 :158).

At the Dissolution Ashweir, Ithelsweir , Walweir, Plumweir and Bigsweir still functioned, paying the Abbey fisherman six pounds. Although fish was present in bone assemblages from contemporary layers at the Abbey they were not statistically significant in number; bones from a cormorant were, however, found and interpreted as representing potential hazards for local fish stocks (Courtney, 1989 :141). Deep sea species of cod and conger eel were the dominant finds identified in fifteenth and early sixteenth century layers at Tintern, rather than river varieties. Although conger eels could be caught locally, cod represents the changing emphasis towards deep-sea fishing and the nature of the boats using the Wye. All the weirs on the Wye were demolished in 1695 to improve navigation (Putley, 1999: 17). However the resultant increase in flow rate lowered the water level and prevented boat passage other than during winter flood. The weirs must, therefore, have been integral to the functioning of the river landscape during the medieval period.

The influence of monastic weirs on the Severn does not appear to have been so notable, although its waters had ownership by a variety of local and more distant houses. Bath Abbey's interest at Tidenham ceased at the Conquest with Tintern subsequently monopolising the southern Dean shores. Flaxley Abbey, with no direct river access, increased its estate along the Westbury shoreline from the twelfth century. Fisheries from Westbury down to Newnham were shared with Leonard Stanley Priory (*Pat. Rolls.* 1156:100, *Cal. Ch. Rolls.*1257-1300:112-13) and Farleigh Priory (*Pat.Rolls.* 1159: 368, *Cl. Roll* 1247 -51:138), the latter received tithes. St. Augustine's Abbey (Walker, 1998:6) and Pershore Abbey also had holdings at Garne. A concentration of monastic fisheries in this area may be related to contemporary deposition and the creation of new land which could be donated to the religious

houses. St. Augustine's also rented a 'palum' (stake of fish traps) at Ruddle from Abbey Dore, in addition to fish traps owned on the opposite shore (Walker, 1998: 82). This followed legal wranglings regarding Dore's ownership, originally donated by the Berkeley family who dominated the fishing grounds round the Arlingham peninsula (Walker, 2001:20-1).

Above Rodley Flaxley Abbey also shared Hineweir (PRO MR 397) and Bollow. Current erosion around Bollow has revealed organic remains, noted by the author. An area c.100m long is thickly populated with sturdy stake revetment and truncated post alignments, as well as indications and remains of stone and timber slipways or quays - the slipways possibly related to post-medieval ship building in the area. The remains can only be located at low tide; observation is difficult because of reed cover and the narrow width of the shore beneath the steep bank (only 1m wide in places). No dating has been made, but the features must pre-date the nineteenth century, by comparison with the tithe map shoreline. A fishery was recorded here in the Flaxley cartulary, together with a designated access (Crawley-Boevey, 1887:154).

A truncated holloway was observed leading directly towards the central part of the area, terminating at the top of the bank. It links to Windmill field, which was a separate component of the donation of the fishery and suggests that this track represents the Abbey's route. In the river directly below a double row of stakes c.75m wide, was observed under the water at low tide. It led out into the river and stakes were observed at a corresponding position on the other shore, near a hedge line. Extreme weather conditions, followed by foot and mouth regulations has prevented further investigation or survey to date. An eastern access, would, however, be likely, given dual ownership of the fishery with Pershore Abbey, who owned land on the opposite bank. A cross-river structure, secured to the banks might seem more able to withstand pressure from the bore tides, but would necessitate an openwork structure rather than a solid barrier.

The weir appears to have been destroyed in 1233 with 'inundation and freezing' given as the cause. Repair was discouraged in 1268 to minimise weir numbers and enhance the royal industry - 'each weir injures the others' (Stokes, 1914:38). Rows of stakes set at oblique angles to the bank does suggest the presence

of other weirs within this fishery. Their close-packed distribution resembles the comment that the local weirs were 'so strongly and straightly built that there is no space between the rods' (Fry.1910: 374-5). Attempts at further repairs appear to have been abandoned by the end of the century; fishing of all kinds provided a total of three pounds sixteen shillings, less than 10% of Flaxley's income in the *Taxatio Ecclesiastica* (Crawley-Boevey, 1897:46-7). After thirty years' neglect Pershore and Flaxley Abbeys again petitioned to revive Hineweir in 1328 (Fry, 1910:373-4). Timing was similar to Tintern's escalation of fisheries and the difficulties of terrestrial harvests. Flaxley's previous decline in interest in river fishing may have been related to a new focus on fishponds, a fashion begun during the twelfth century.

Fishponds

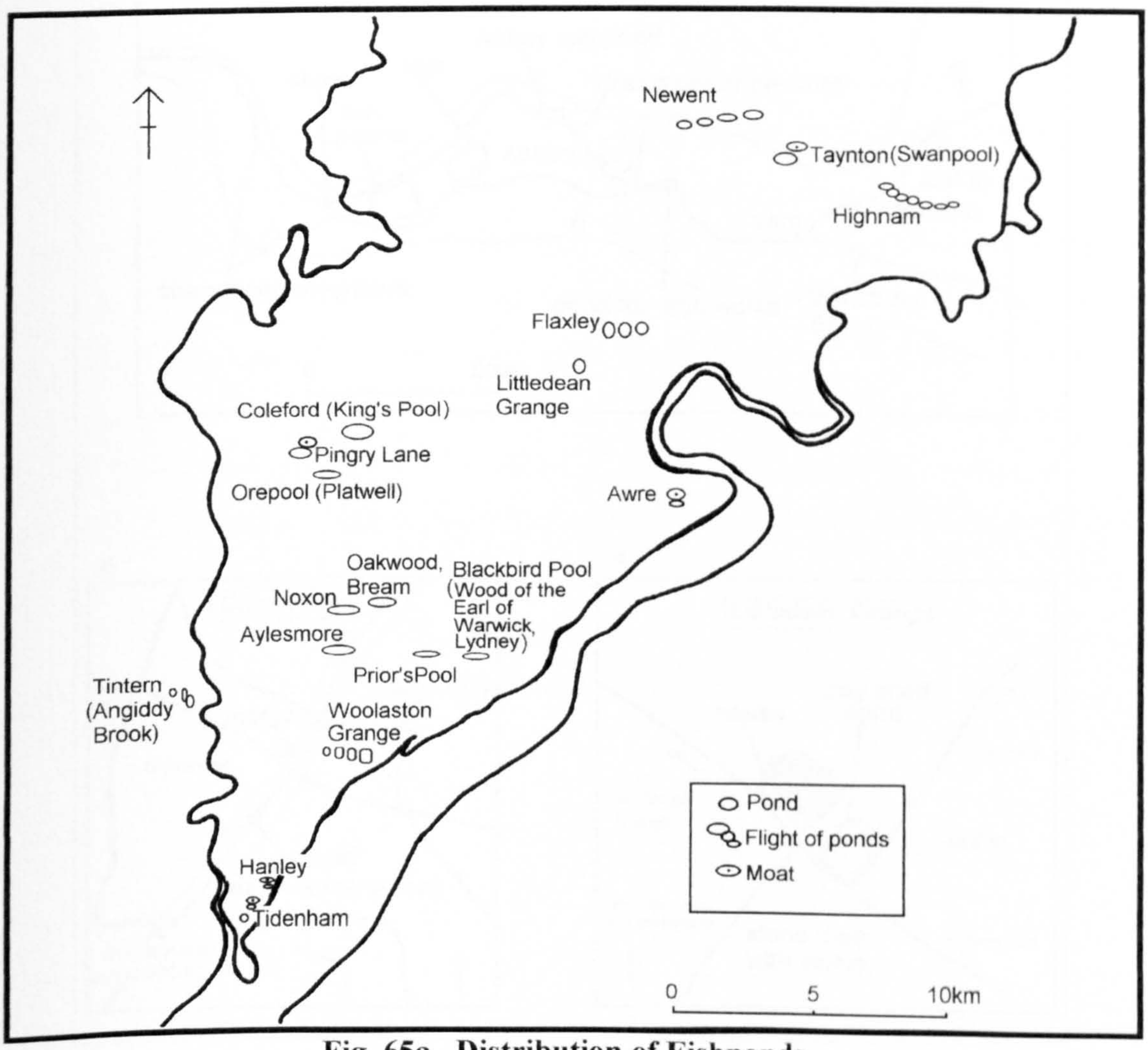


Fig. 65a. Distribution of Fishponds.

Ownership of fishponds may be seen as a symbol of status, in similar manner to moats, which often combined the two functions. They provided fish for both aristocracy and monastic houses, markets which constituted only 2% of the contemporary population (Dyer, 1988:28). Fishponds of various types are found in the Dean (fig. 65a) belonging to both the Crown and local monasteries. At Flaxley Abbey diversion and damming of the Welshbury brook created a landscape of ponds to the west of the precinct (fig. 65b) Ponds were also constructed at its granges: Climperwell near Brimsfield in the Cotswolds (Crawley-Boevey, 1897:75) and Littledean Grange (Townley 1997: xlii). They may form part of a general upgrading of facilities and aggrandisement noted at granges during this period (Platt.1969:16, Bond, 1988:93).

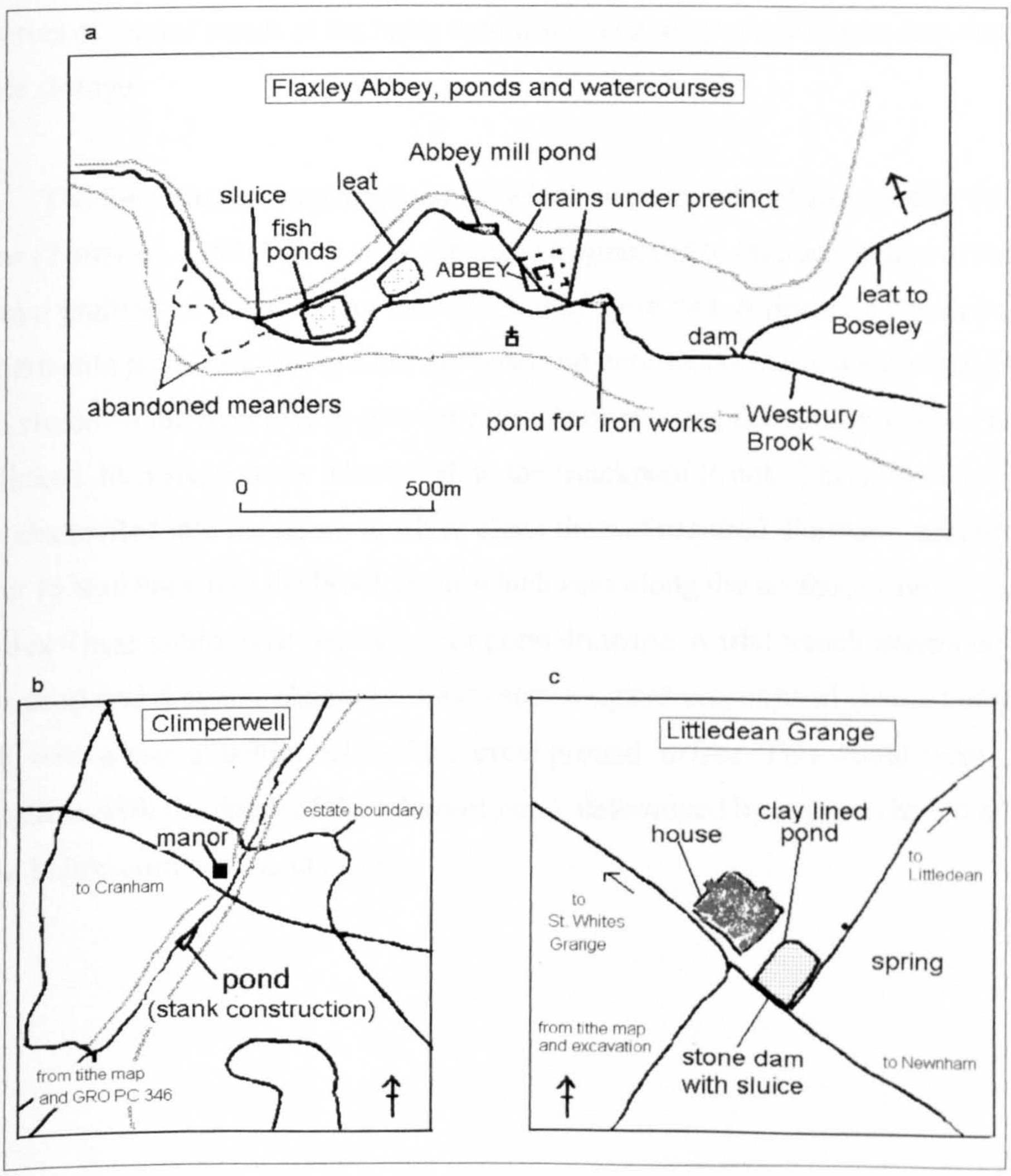


Fig. 65b Fishponds at Flaxley Abbey and its granges.

Ponds could also be found at granges belonging to other local monasteries. At Newent Priory a series of fishponds lay to the northeast of the proposed precinct. They were later incorporated into a longitudinal lake in the grounds of Newcourt (tithe map 1840) and the eastern section, fed by the stream, was used as a tuck mill pool before it was lost to railway construction. Gloucester's Highnam grange had seven stanks surrounding the western and southern sides of its buildings. These ponds were created by building dams across the stream behind which the water 'stanked up'. After the Dissolution the ready-made system was also the basis from which to create a lake which survives in diminished form today. An eighteenth century illustration (Ellerington and Herbert, 1972: 20) demonstrates its location below the grange chapel. The position is similar to a pond complex at Woolaston Grange (fig.66, Pl.22), but the series of graded ponds at the latter would seem to suggest a different function to simple storage.

The four Woolaston grange ponds, which were found and surveyed by the author (Townley, 1988: Fig.3), were carefully engineered to take advantage of the minimal gradient of the alluvium into which they were dug. A drainage channel to the southern side prevented silting from hillwash and earthworks suggest a double ditch and a sluice on the river side to prevent river water entering the complex. The channel was linked, by a sluice at its inland end, to the Blackpool Brook. This allowed water to be channelled into the ponds to fill or clean them if required. Further channels appear to lead back into the brook itself which runs along the northern edge of the complex These could have been used for pond drainage. A trial trench examined one of the proposed drainage channels. It indicated a square-cut, unlined channel of 0.45m width, with a base at 0.90m below the current ground surface. This would seem compatible with the depth of the adjacent pond, determined by augur to be c.0.80-0.90m below current ground level.

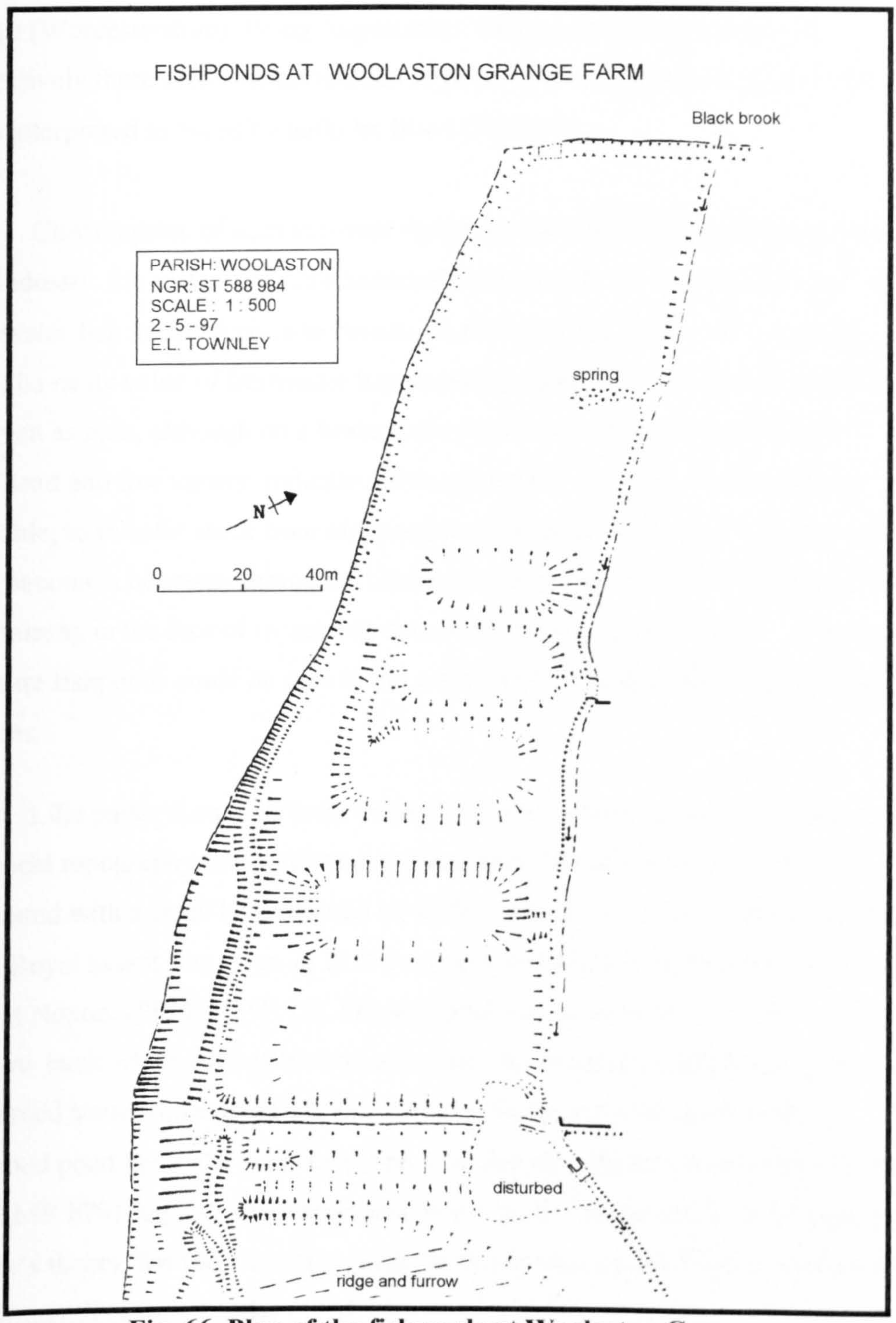


Fig. 66 Plan of the fishponds at Woolaston Grange.

Tintern also owned a series of ponds in the valley of the Angiddy Brook near the Abbey precinct and again near a major fishing river. It would suggest a specialised industry for breeding particular freshwater breeds. The pattern may be mirrored in monastic houses elsewhere: similar series, or flights, of ponds have been noted at Owston Abbey (Leicestershire), Daventry Priory (Northamptonshire), and Halesowen

Abbey (Worcestershire). Being Augustinian, Cluniac and Premonstraterian respectively there seems no correlation of pond type to religious order and they have been interpreted as breeding tanks by Bond (1988:98).

Consumption of such varieties was proportionally small in respect to the total fish industry: the earl of Oxford's household consumed only two hundred and fifteen freshwater fish in comparison to twenty-six thousand sea fish in 1431-2 (Dyer, 1988: 30). The rarity value of freshwater breeds indicated prestige and also allowed them to be given as gifts, although on a lower scale of privilege than venison. Gifts were of both dead and live variety, indicating that successful methods of transportation were available, to transfer stock from one pond to another. In the Forest 'royal' ponds may have become a necessity during the thirteenth century to maintain gift giving and entertaining in the face of increasing demands on Forest resources (ch. 5). Permission to create fishponds could be seen in the same light as permission for imparkment and warrens.

Like parks, fishponds were created on the periphery of the Forest (fig.65a). The local topography favoured stank construction. 'King's Pool' at Coleford is illustrated with a small boat and had a smaller fishpond to its southwest (PRO MR 879). Royal assent was given in 1317 for assart and pond creation within the King's park at Noxon. (PRO C139/115). Platwell pool lies to the north (SO 575 077), extant as a low bank which fills with water after rain. Association of pond with park reinforced status value as well as providing drinking water for deer. A further unnamed pond lay to the south of the park, at Breme. The pond's anonymity by 1608 (PRO MR 879) suggests any importance had waned. This would be in keeping with Steane's theory that there was a general decline in the number of royal fishponds after the thirteenth century heyday (1988:49).

Secular ponds may also be dated to this period, sometimes linked to the creation of moats. A thirteenth century pond held by Walter Wyther in Warwick's wood (Hart, 1987), would seem to be modern 'Blackbird Pool'. A moat adjacent to a large rectangular pond was illustrated in 1608 (PRO MR 879) in Pingry Lane. It formed part of the later Breckness Court estate (Dean Archaeology Group, 1985) and was excavated in 1993 by Ian Standing (1993, unpublished). A further moat was

indicated on the map at the end of the Redbrook valley, again near Coleford. Such clustering is also noted in the moats around Poulton and along the northern road corridor of the Forest. The latter included a group at Taynton which had fishponds and swan pools (Williams, 1996). 'A considerable number' of lead weights have come from Taynton Parva (Putley, 1999: 70-1), suggesting line fishing.

At other sites moats may have stored fish, with proximity to the dwelling protecting against poaching. Poaching is a common feature in medieval court records. A truncated moat at Awre, found and surveyed by the author (fig.11) is linked to the Bideford Brook, noted for trout in the eighteenth century (Winters, 1700). At Hanley, in Tidenham, a spring-fed stream was dammed to create a moat, seen on tithe and early Ordnance Survey maps (Gwatkin, 1993). To its south another dam had been made across the shallow valley to form a narrow, transverse pond (ST 565 964). It survives as a depression with low oak covered bank. The separation of these bodies of water at the thirteenth century sub-manor, may have been to accommodate the topography and avoid the construction of a single high dam. However, proximity to the river may suggest different functions. Simple ponds like this could have been used as a store pond, or live larder (Bond, 1988: 95). The moat and ponds identified by the author nearby at (ST 563 963) also links to the river by holloway and may have had similar function.

'Live larders' may also have been by-products of other activity. Mill ponds would have provided an environment for fish harvesting, most notably of eels which swim up the streams from the Severn. An eel spear (glaive) was found in Lantony's Prior's Pool, some distance from the river on their estate at Aylburton in 1939. Although it is a modern example of the tool type it provides evidence of eel production in the inland bodies of water. Llantony does not appear to have created any purpose-built fishponds on its Dean estates, in contrast to practice by other religious houses. It did, however, have an extensive fishery in the Severn in the reaches near its precinct: a 'wooden pool' *stagnum ligneum* was recorded in 1270, with 'burochios'(possibly bags or nets?) and other engines. It was apparently part of a crowded river with three other weirs noted in the vicinity (Madge, 1903:45). The reach was still named the 'Prior of Llantony fisheries' in the sixteenth century (PRO MR 397), although fishing was shared with Gloucester Abbey.

Late medieval fishing in the Severn

Gloucester Abbey holdings had an extensive river frontage along both Severn and Leadon. By 1541 its two weirs of 'New weir' and 'Lille weir' had been demolished as they no longer made a profit, but in 1385 the Abbot was recorded as using 'seines, drags, fornwiles and cornwiles, with butts used for lamprey and salmon fry (Ellerington and Herbert, 1972: 24). All these methods do not require fixed structures, although the traps were tethered. Similar tethered methods are illustrated on a sixteenth century map (GRO D15/16) at Gloucester's manor of Ruddle where a row of eight 'kiddles' are shown extending out into the river above Bullo Pill - extant remains of a holloway leads to the area from Ruddle (SO 688 104). Long nets were also used in this area, designated 'the fisheries' on the sixteenth century map (PRO MR 397). A variety of fishing methods were also used at Minsterworth and Duni (Hart, 1863:260). Acquisition of the Domesday fishery of Duni was a deliberate exchange by the Abbey in 1345 (for land at Wraysbury and Langley in Buckinghamshire) (*Cl. Rolls*. 1345 m7. Ed III). This timing resembles the resurgence of Flaxley's fishing interests, and increasing contemporary use of the river led to restrictive legislation.

The previous century the Vice Constable of Gloucester had instituted an enquiry into the state of the 'gurgites' down to the sea, including kidells and piscaria 'which may have been detrimental to the king or raised without warrant' (Madge, 1903: 13-14). In 1353 the Vice Constable voiced concern regarding the King's weirs being overshadowed by other weirs, a problem that dated from the previous century (*Lib.Rolls*, 1254: 3,26). Boats, nets, kiddels and boritas(?) were specified as potential problems. A commission was set up in 1391 to look at 'the taking of salmon in close time by divers young men by nets, engines and structures which destroyed salmon, smolts and other young fish and the brood and fry of salmon, lampreys and other fish'. The contemporary riverine landscape would therefore appear to have been crowded with structures, although by 1351 seasonal use of them had been introduced (*Lib.Rolls*, 1351: 59).

Royal fisheries

The King's own fishing interests focussed on the Inner Estuary. Most documentation on Crown fishing comes from the thirteeenth century and portrays Gloucester as the

centre of the royal fish trade. Gloucester officials were in charge of all aspects from procuring, processing and distribution, to maintenance of weir and stock control. Distribution of fish was varied, to wherever the King was in residence, and costs were high: ninety one pounds fourteen shillings and five and a half pence was paid for forty five lampreys bought on the King's behalf by the sheriff for Lent, and for costs of lampreys and 'putting other things that come from the king's weirs in gelatine'. Newnham had a role in such provisions (*Lib. Rolls*, 1246:41, 1247: 107 1251: 347).

Materials for repair to the weirs came from the Forest of Dean. In 1248 the Constable of St. Briavels was ordered to allow men from Gloucester to look for suitable materials from the king's viridarium 'in the usual manner' (*Lib. Rolls* 1248). The virgas (poles) plus an annual allowance of two blectrones (young saplings) with which they were accustomed to repair the gurgites, suggests that the engines were of sturdy construction, though they needed regular attention . No particular area is mentioned as a timber source, though *viridarium* (plantation) suggests there may have been a designated area for such timbers. Sometimes provision was related to specific landholding; a fishery belonged to the King's brother Edmund at Hayden in Rodley where he also had ten acres of pasture. It was Elias of Heidun (sic) who was responsible for supplying poles for the fishery in the early 1280s. The Regard of 1282 records fraud in profiting from rods in excess of requirements (Hart, 1987:63).

Few records survive for royal fishing interests after the fourteenth century, but there appears to have been a decline. By 1424 the Rodley fishery had been divided into individually-named putcher rows, leased separately (GRO DL 29/594/9518, 29/595/9533). The fishery was described as 'the halves and havendals of Rodley Weir, New Weir and Garne Weir with the fishery called Unlawater' when it was leased to Alexander Baynham in 1521. Unlawater is retained as a placename at Newnham, near the pill which marked the southern extent of the fishery.

Rows of putchers had previously been used at Awre. In 1300 fishing rights between Bullo and 'Hamstallespill' were in the hands of the wealthy Box family whose estates stretched across to Brimspill on the south of the Awre peninsula.They held fisheries at Hams and Woodend in addition to boat landing sites (Curry, 1996:18). The wealthy Berkeley family who already owned parts of Awre manor

accumulated fishing rights along the Forest shores in similar manner to their acquisition of grazing land and ferries during the economic slump caused by murrain and the Black Death. This added to eighteen miles of fishing rights along the eastern Severn littoral (Maclean, 1883: 317-322). During the period 1332-9 Awre had produced an annual return of one hundred shillings from local fisheries. Fishermen who worked them were also manorial bailiffs and the industry warranted a fish court (GRO D 421/m4). A special officer called 'piscator de Berkeley' included Rodley, Garne and 'Puthouse' in his accounts which came to £30 per annum (Maclean, 1883:164). Although the lord continued to have rights to royal fish, by 1493 rights called the 'gale' were recorded. A gale was a form of tax in which the lord shared profits from local catches in cash or kind (Walker, 1998:6,82).

A putcherewe is recorded as a local method of entrapment. Such a method involved an investment in materials and would have resembled modern putcher ranks. Although the scale at Awre is unknown a similar structure at Horsepill supported three hundred baskets in 1707 (Curry, 1996:57). This fishery was linked to Stroat by a designated road, the cobbled surface of which was found by the author during excavations at ST 576 975, and described as the road 'to the fisheries and quays of Horsepill ' (Curry, 1996:57). Such an arrangement would offer the opportunity to distribute fish catches by either land or river routes and can be seen in the location of other extant putcher sites: Beachley, by Slime road /Aust ferry, Alvington/Wose Pill port, Rodley/Framilode passage. Minsterworth/ port and Gatcombe/ port. Scale and location would suggest fishing on an industrial scale with improved efficiency and profits from investment from a concentration of activity into multiple trap constructions. Extra income could then be obtained from the shoreline which had thus been freed for the use of tenants who could be taxed as above.

Little evidence exists for the destination of fish catches though it is likely that some would end up in local markets, such as Mitcheldean, where a fishmonger was recorded in 1477(Curry, 1996: 187). Extensive coastlines downriver could be expected to provide fish for its own hinterland and exportation of catches in this direction are less likely than to the landlocked Midlands, which could be reached via the Severn. There is no evidence for local smoking or salting, but salt-pans existed at Awre, seen in existing depressions near Woodend. Gatcombe brought fish into the

area, dealing in deep-water fish such as cod from its long-distance sea trade. This provided the bulk of fish for mass markets and again was funded externally. An early fishery at Gatcombe, owned by the Duchy of Lancaster in 1283, had been extended by obtaining its status as a port by the middle of the fifteenth century and it was trading in fish from Ireland (PRO E 122/19/14 f.25). A short length of stone quay remains parallel to the river at SO 679 054. A similar trade was already passing through Striguil by 1306, with prisage for boats bringing or carrying fish worth two shillings per annum. The lord took the best fish from each boat, but nothing from salt fish (Fry, 1910:50). Salt fish had been associated with Tidenham from the eleventh century, with a rent of thirty thousand herrings (Grundy, 1935: 237 -253) - and the name 'Herring Bridge' refers to an area of Beachley. Two separate industries, salt, and freshwater fishing, therefore appear to have been operating simultaneously in the same waters during the medieval period.

Conclusion

In terms of the types of fixed structures used to trap fish, the tidal waters of the Severn do not differ from contemporary examples in other parts of the estuary or in other tidal rivers. Their difference lies in scale, which was modified by the extent of the intertidal area. In post-Conquest Tidenham the largely tenanted basket weirs supplemented the income of those who held small parcels of land. They contrast with prestigious and more permanent constructions across the Wye, for royal or religious consumption. Fish supplies to an external landlord, Bath Abbey, in the pre- Conquest period had been redirected to the lordship of Striguil after Domesday, a centre for marketing both sea and river fish. Within the Wye the physical dimensions ensured continuation of the cross-river weir constructions with comparably higher returns than the Severn, but in the hands of institutions or the elite. Proliferation both caused problems for river traffic and indirectly supported it by altering the behaviour of the river flow.

In the Severn, Tidenham appears to have reached a maximum distribution of fishing sites by the Anglo-Saxon period. Its weirs were termed 'fisheries' by Domesday, and contemporary application of the same terminology to other manors would suggest similar arrangements and structures there. Changes in land-ownership, and the growth of sub-manors, particularly in Beachley, enabled agglomeration of

fishing sites and the application of larger, more efficient traps. Woolaston exemplifies the re-use of a single site for a variety of fishing methods. These could supply both increasing populations in the local manors and the local market at Striguil.

In the Inner Estuary ownership of the fishing rights by the king was maintained from Domesday. The situation resembles that of Striguil in the south of the Dean with fish delivered to the lord's castle at Gloucester for distribution, and to supply the city markets: a perishable product, such as fish, would necessitate rapid shipment for either processing or its point of sale. Proximity to Gloucester and the demands both of local monasteries and increased populations encouraged escalation of fishing in these reaches during the thirteenth century. Monitoring protected both the royal weirs and the needs of shipping in the river. This may also have encouraged different methods of entrapment which were less permanent or diversified the catches. Salt fish supplemented basic demands, but contemporary elite consumption and status was catered for by the creation of fish ponds on monastic and royal estates. Their use dwindled by the fourteenth century when murrain produced a renewed interest in river fish in both rivers. There was an increase in both size and numbers of weirs to supplement terrestrial resources. Indiscriminate catches reduced fish stocks and necessitated the introduction of seasonal restrictions and permitted size of fish. A diminished population, following the Black Death, subsequently reduced pressure on the stock.

Fourteenth century fisheries began to be leased to individuals, but reduced demand for land allowed the Berkeley family to purchase both estates and their fishing rights along the middle estuary. Their wealth enabled investment in more efficient and extensive fishing structures - the putcher weir. The catches, predominantly salmon, could feed into the markets, long established by their Berkeley estate, again removing the profits outside the Dean. The new technology, established on ancient fishing sites, ensured the survival of salmon fishing to modern times, in tandem with netting methods. A social, rather than economic, role has been fulfilled by the continuity, although minimal, of lamprey fishing - the species is still presented annually to the reigning monarch.

Eel fishing has also survived, but on a subsistence rather than commercial level. Until the last decade the annual spring elvering on the Wye and Inner Estuary remained a local custom. Scoop-nets and boxes were used under the banks in night fishing vigils. As in medieval fishing, large-scale corporations have now escalated catches for foreign markets, numbers have decreased and the local delicacy and its custom have dwindled. Deep-sea trawling has also diminished salmon stock and a ban is being introduced on fishing in the river to conserve stocks - abandoned putcher ranks signify the break in a custom which has its roots in the medieval period and beyond.

CHAPTER 8 : THE RELIGIOUS LANDSCAPE

Introduction

Religion is one of the defining elements of the medieval period in England. In the Forest of Dean examples of its physical expression can be seen, the parish churches, ancient wells, numerous land units owned by religious foundations and a single monastery, at Flaxley. How did this land use relate both to England as a whole, or to the more local context of Gloucestershire (reputedly 'God's own country', with the greatest concentration of churches in England)? How far back did Dean's religious sites date and what were the factors which determined location, form, extent and development?

The location and political evolution of the Dean placed it between potential influence from Wales, and the early Welsh church, the early English Anglo-Saxon church and the Norman influence of the Marcher Lords. These all followed possible continuity from the Roman church, the Dean lying in an area which research has identified as one of those with the highest incidence of post-Roman church survivals in England (Quensel von Kalben, 1996: Fig.5). A large corpus of work has been published on the various monastic orders of England, among which the author has consulted Aston (1972,1993), Platt, 1969, Knowles, 1963, Knowles and Handcock, 1971, Bond (1988). There are also the invaluable resources on monasteries: the *Taxatio Ecclesiastica* (1291) and the *Monasticon Anglicanum* (1535). Both surveys illuminate the financial and economic aspects of the contemporary religious houses, including those of the Dean.

More specific to the Forest of Dean area is the paper by Harrison (the Abbey of Grace Dieu) 1998 and the many publications on the Welsh Cistercians by Rev. Dr. D. H.Williams, notably 1976,1983 and 1986. David Williams' research has provided a detailed and comprehensive account of all aspects of religious life pertaining to the order in Wales, using both documentary and archaeological data. The research includes Tintern Abbey and its lands in Dean. His fieldwork in Dean took place some time ago and current development of the Dean area (Woolaston Grange particularly) offers the opportunity for the author to add to the accepted model in the southern area of Dean.

For the northern areas of Dean, Hart (1863) and Baddeley St.Clair (1913) transliterated and documented the records of Gloucester Abbey. For the same geographical area Crawley-Boevey (1897) accumulated and transliterated all known references to Flaxley Abbey, including the remaining sections of its cartulary. Although the contents of the cartulary are offered in both English and Latin it should be noted that the translations are rather truncated and do not provide all the details given in the Latin version. All these publications merely list rather than interpret the data. A more recent work on Flaxley Abbey by Watkins (1985) does attempt interpretation, but presents a story at the expense of accuracy. There is no current synthesis for the Dean as a whole other than the dissertation on the monastic landscape written by the current author (1997). Like the publications listed above the dissertation tends to focus on the post-Conquest foundations. There was also a tendency, because of the scale of the project, to accumulate data rather than attempting to analyse the function, role and dynamics of the monastic houses within the Dean. The organisation and layout of the monastic sites, granges, churches and chapels, holy wells and preaching crosses were examined and mapped, but with the exception of holy wells, extant examples of religious sites in the Dean represent the religious ideologies of the later medieval period.

Creation of religious features in the landscape would have had a major impact, not only on social groupings and allegiances, but also on the economies which supported them. They would not have been placed in an empty landscape and in order to provide a context, it is necessary to try to identify the location and influences of earlier religious sites, for which there is no current synthesis. A major source of information for pre-Conquest Welsh religious houses is the *Liber Llandavensis*, a collection of pre-conquest documents relating to landholdings within the see of Llandaff. In her books (1978,1979) Professor Davies notes the extreme caution which should be taken in using this resource, as the dating of many of the documents is potentially inaccurate.

Pre-Conquest Churches

The majority of extant church structures in Dean contain some elements of twelfth century architecture (Salter, 1990:1-45). Heighway, however, suggests that most of the Gloucestershire churches had been founded prior to Domesday (Heighway, 1987:

120). These buildings may be seen as part of a tenth century initiative across the country when manorial churches represented rising prosperity and a more localised religious base. With manors restricted, by the royal forest, to the periphery all of these churches are located around the margins of the Dean. However, some, like Newnham, have been relocated from their medieval location. Newnham's church originally lay adjacent to the former quay (PRO MR 397). Although much of the shoreline has been eroded, human bones were unearthed during building work c.80m along the shoreline to the south of the quay (builder, pers.comm.) and suggests an extensive cemetery. Aylburton church was also moved last century, from a former site on Chapel Hill. The fabric of the former chapel was dismantled and reconstructed at its present site, within the modern settlement.

Aylburton was a chapelry to Lydney. The Domesday folios remains silent over the majority of Gloucestershire churches and there is no information available regarding a church at Lydney although land there was held by the Bishop of Hereford. Like Aylburton, the churches at St. Briavels (Lidenei Parva) and Hewelsfield were originally chapels subordinate to Lydney church in the post-Conquest period. The extent of this jurisdiction suggests that there may have been an earlier, 'minster' church at Lydney. Size of territory was given as the criterion for identification of Westbury church as a minster (Heighway, 1987: 168). Minster churches had previously been part of Mercian political strategy. The Mercian kingdom and its client kingdoms, including Dean from the eighth century, demonstrate a network of minsters in which members of the ruling families were installed as heads of religious houses (Blair, 1988: 38).

If this theory can be applied to the Dean then one would expect to identify the factors which would suggest the existence of such minsters; in particular they would seem to be in locations which would have some particular significance for the local community. Blair suggests that in addition to subordinate chapels, a minster church is often found in proximity to a 'king's ton' and may later have developed into a town (Blair, 1988: 35-36, 40-44). In Gloucester the minster church of St.Oswald's was located in the corner of the Roman town; its dedication is of Northumbrian origin and indicates the influence of northern religious expression via its connections to Mercia.

St. Peter's Abbey in Gloucester was also founded in the eighth century and was built over an important burial ground, near the royal seat of Kingsholme.

A combination of such factors could suggest that Newent was a minster church: a Roman site, juxtaposition with a royal vill *(Kingston)* and post-Conquest development into a town. Mercian connections can be seen in the Northumbrian style of the remains of a cross-shaft, found in 1907. This is not firmly dated but appears to belong to an eighth century style and depicts the tree of knowledge (Bradfield, 1999: 1-2). Such a date would make it contemporary with St. Oswalds in Gloucester. A similar twined motif, this time of a vine, was found at Dymock church, where a page from an eighth century bible was also found, re-used to line a later volume (Gethyn-Jones, 1952). A similar date is given, by Bradfield, for a small carved tablet found at Newent in 1912 in close association with a skeleton (oriented east/west); Zarnecki (1953) places the tablet in the eleventh century. The carving commemorates 'Edred', an ecclesiastic, in a mixture of both Celtic and Saxon workmanship. Celtic origins have also been attributed to four sculpted slab fragments, recovered from the walls of Newent church in 1880-84; seventh century features are similar in style to those on two grave-slabs extant in the churchyard (Bradfield, 1999: 2-15). The artefacts suggest continuity of a religious site but with a change in its political orientation. Dating conforms to the proposed eighth century expansion by Mercia associated with the Bishopric of Hereford.

Newent had been part of Westbury Hundred before Domesday and, although Heighway suggests that Westbury itself had been a minster church (above), the site does not conform to Blair's model in location. Nor does it have any physical features of pre-Conquest sites which are found elsewhere, such as at Hewelsfield; there the churchyard is both raised (indicating longevity of use) and has a rounded outline. A study of churches either side of Offa's Dyke demonstrated that around 66% of sites with curvilinear outlines are of pre-Norman foundation (Brooke, 1992:77-89) - others are of rectangular plan. At Westbury proximity to a rectangular, banked enclosure on the alluvium, previously identified as a moated site, may offer the possibility of an earlier foundation. The association of the present church to the local manor might suggest that any earlier church had been supplanted by a manorial foundation.

Although the suffix of Hewelsfield is Anglo-Saxon the name Hewel may derive from 'Hywel', the name of an early Welsh king. It may suggest an earlier Welsh association with the site, in similar manner to the Welsh saint retained in the name St. Briavels (Walters, 1993:124). The extent of Lydney's religious jurisdiction suggests, therefore that there may have been a Saxon minster church to which former Welsh sites became subordinate.

A putative Saxon landholding both at Westbury and Lydney by Glastonbury Abbey has been dismissed as misinterpretation of the documents, with Somerset a more likely location (Abrams, 1996: 164-5, 242-244). Anglo-Saxon charters do, however, identify a religious connection between Lydney and Pershore Abbey; six hides held at Lydney, together with land at Wyegate on the opposite side of the Forest (Finberg, 1961: 59). Wyegate was adjacent to the hamlet of Stowe where there is an extant enclosed spring, St. Margarets, at the centre of converging trackways near the site of a hermitage (Williams, 1983: 232). The application of a saint's name to a particular spring can indicate Christianisation of a former pagan site. Not all sites were adopted by the Christian church, however. The name 'Harrow Hill', derives from *hearg* (Saxon for pagan site). Remnants of a horned deity were found (Walters, 1992:56) - a symbolism found, by the author, on statuary at the Lydney Roman temple site. Survival of paganism at Harrow would seem to reflect its isolated location which was subsequently absorbed into the post-Conquest forest. It would, however, seem that some significance continued to be attributed to this particular area and it is now the site of a church.

The designation of 'forest' may also have determined the fate of a spring site c.3km southeast of Stowe at modern Close Turf. No significance has been attributed to this site but analysis of a variety of evidence suggests to the author that it may have been a focus for religious beliefs. A defaced Roman altar, roughly inscribed with Christian symbols, was found here, deposited in a boggy area (Walters, 1992:118). On the map of 1608 'Close Stuffs' lies adjacent to 'Gaynor's Myne' (part of the Lydney scowles), and to the north of tracks which converge at 'Wyllbury Green' - possibly named from the West Saxon word for well(spring). The area appears to have had a long history of significance with a menhir remaining in 'longstone field' near Close Stuffs until the nineteenth century (Walters, 1993: 24). A short distance to the south is

a group of field names which suggests a local, Saxon occupation; 'edisland' lies above a combination of 'Great and Little Saint Hathwaies' and three fields called 'The Coort Fields'. Williams suggests that 'cwrt' or court is indicative of monastic property (1993: 228). There are no extant features to be seen in the modern farmland which forms the northern boundary of Alvington parish (owned by Llantony Priory during the post-Conquest period). However, it is an area which invites further research.

The deposited Roman altar bore rough inscriptions of 'NO NO' - perhaps indicating 'Nodens', the local Celtic god, apparently related to water through fishing and the tides (Townley, 1996, unpublished dissertation). His prehistoric shrine at Lydney had been re-used as the site for the Roman temple. Architectural elements of the temple suggest that it may also have been used for Christian worship in the late Roman or post-Roman period: side chapels, a possible baptistry, mosaics of the Dorchester (Christian) school and an alcove and piscina by the entrance. Although masonry was re-used in the nearby castle (ch.4) the temple walls remained several feet high into the eighteenth century, when many remaining artefacts were given as gifts by the lady of the manor (Bathurst family records). Crates of uncatalogued artefacts, some from 1931 excavations, remain at the manor house and access was denied to the author. They have only been made available for research in 2003 and no reports are available yet.

A small number of published artefacts from Lydney (Wheeler, 1932: Figs. 13-16) suggest there was some survival of activity at the temple precinct into the fifth century, but there are no indicators of any local settlement which supported it. The potential Christianisation of the Roman temple would mirror the situation at Uley across the Severn (Woodward and Leach, 1993). Uley was one of a series of early Christian sites around the Severn estuary, an area which research has identified as one with the highest incidence of post-Roman church survivals in England (Quensel von Kalben, 1996: Fig.5). There is no evidence for any religious structure in the Lydney area during the Saxon period, although land was owned by the Bishop of Hereford, following Pershore's ownership. Creation of the Domesday manor of Lydney could have provided an impetus for a new church. Its prominent position on a headland near

the later, thirteenth century port, suggests the heart of the new manor from which the modern town gradually developed.

The riverside location of Lydney church is similar to the church at Awre, which was recorded at Domesday. There is no evidence of a Saxon foundation in the extant architecture at Awre, but the raised churchyard indicates longevity of site use and nearby buildings mask its original outline. A tithe barn stood to the north of the church until the nineteenth century. A further church, recorded in 1086, is located at Tidenham. Before the conquest 'Duddenham' had been an estate of Bath Abbey. Its tenth century charters record a thriving mixed economy, based on five constituent tithings, in which fishing played a notable role (Grundy, 1935:244-245). At thirty hides the Duddenham estate was a similar size to one donated in 780 to Gloucester Abbey in the north of Dean which was extended by the Benedictines from 1022 (Elrington and Herbert, 1972:17).

Tidenham church, although of a different name, has usually been assumed, in published works, to have been the location of the earlier eighth century Welsh church of Istrat Hafren (Elrington and Herbert, 1972:73). The current church, thought to have been the site mentioned at Domesday, lies adjacent to the remains of a ditched enclosure. The enclosure would seem to equate to a description of the manor house in the tenth century charters (Robertson, 1939:207). It would suggest that Tidenham conformed to the pattern of manorial churches and is unlikely, therefore, to have been Istrat Hafren. Extant documents may, however, provide clues to the location of this Welsh church.

An eighth century description of Istrat Hafren described it as 'from the woods to the plain to the sea', and to 'Podum Ceuidd', consisting of an uncia of land (Elrington and Herbert, 1972: 73). Podum Ceuidd is identified as Lancaut, a name describing a monastic house in a wood. 'Llan' was often a later substitute for 'Podum' in place-names and an abbot was recorded in 625 (Davies, 1978:122, 108). The extant structure at Lancaut can only be dated to the twelfth century when it was a chapelry to Tidenham. Lancaut has retained its Welsh name until today, surviving the political changes of the area, perhaps because of its marginal, isolated position on a bend in the Wye.

The '*Ecclesia* of Istrat Hafren' was founded in 703 by a grant from the Welsh king Morgan whose son lost and regained the estate, with a further re-grant made in 878 (Davies, 1978:173,182). The religious house and its name appear, therefore to have survived several political upheavals of the area. Tithings in Tidenham had eighth century 'ton' names apart from the monastic Lancaut (above). As Istrat Hafren also survived beyond this phase of naming, it would seem possible that, like Lancaut, it survives today, in truncated form, as another of Tidenham's tithings: Stroat. The location would be topographically appropriate as the Welsh name means 'Severn Way' and a cross-peninsular track, dating to the prehistoric period, runs through the tithing from Horse Pill (Elrington and Herbert, 1972: 53). Hoar stones above Garston Farm in Stroat would mark a boundary with Lancaut tithing and conform to the documentary evidence.

Such a location for Istrat Hafren would also fit other criteria. Its original land unit, of about five hundred acres, was far short of the dimensions of Tidenham as a whole. It was, however, approximately the unit in which Roman estates were commonly conveyed to the church in early medieval Wales, 'retaining their size, shape and rights over the inhabitants' (Davies, 1978:41). Stroat lies east of the Roman villa of Boughspring and a curvilinear field lies to the east of modern Stroat House. Its appearance suggests man-made intervention with the natural topography, and it may be a possible location for the ecclesia itself, in an area of productive farmland. Welsh monastic houses were predominantly sited on land with the modern classification of 'A' grade (Davies, 1978:28), such as the soils of Stroat. The high potential returns of such soil may have been one factor enabling close spacing between houses: the Wye Valley had the most dense cluster of monasteries in Wales (Davies, 1982: Fig.50). Land in the vicinity of Stroat had a continuity of monastic ownership in the post-Conquest period, with both Monkton Farleigh Priory and Gloucester Abbey holding small estates.

Istrat Hafren was described as an *ecclesia*, one of thirty eight in the extant Llandaff charters, mainly distributed in Ergyng territory. *Ecclesiae* are suggested as being churches which served the needs of a secular community (Davies, 1978:123). Use of a 'heres' as one of the ninth century charter witnesses suggests association with a *clas*, a hereditary property-owning religious community, denounced in twelfth

century Wales (Davies, 1978:124). Other known local *ecclesiae*, such as Bicknor or Eccleswell, can be identified in the vicinity of Roman sites. It offers the possibility that the curvilinear site of Woolaston church, adjacent to Black Brook, may be an unidentified *ecclesia* in proximity to the Roman villa of Chesters. It is unlikely to have been a manorial church as the settlement of Woolaston lies on the hillside above. Like Stroat, Woolaston also had post-Conquest monastic ownership - by Tintern Abbey. Woolaston has itself been suggested as Istrat Hafren (Faith, 1994) on the basis of a small statuette found in the church, but does not appear to match the bounds as described above.

In the north of Dean the placename 'Eccleswell', survives near Weston-under - Penyard, on the periphery of Roman Ariconium. *Eccles* often indicates sites of Roman churches, but this origin is dismissed in this case (Cameron,1968), and all religious artefacts associated with Ariconium have, to date, been to pagan deities. Indirect derivation from the Welsh, *Eglwys* (also meaning church) is possible. It has been interpreted as 'Spring at a Celtic Christian centre' (Coplestone-Crow,1989:130), a derivation with which Gelling concurs (1992: 114). Located near the spring-head of the Rudhall brook, the site of Eccleswall conforms to Christian association with water, and extant remains suggest a circular enclosure which typifies early religious sites. A further rounded enclosure surrounds the church at the eighth century Saxon settlement of Linton, which became the dominant local settlement. Both are within a few miles of Newent (above) and suggest a similar close spacing of church foundations as that found along the Welsh border and in an equally fertile location. Continuing religious activity in the area during the pre-Conquest period can be seen from a tenth century reliquary clasp (Hereford Museum) found locally.

Davies (1978:156-9) suggests, on place name evidence, that Ariconium represents a Roman see, its name continued as Archenfield - and that subsequent religious development had a political basis. Her suggestion of relocation of its focus to Welsh Bicknor (where a bishop was recorded in 500 or earlier) is based on proximity (Davies, 1978:157). English Bicknor was the only Domesday manor in Dean to have Welsh ownership (Morris, 1982: 37.3). Foundation of a monastery, 'Garth Benni', can be dated to c.575 by a charter recording its gift by King Peibio of Gwent and Ergyng to the Bishop of Llandaff . Welsh Bicknor has been identified as

the location of the religious house by Walters (1992:122) in concurrence with Davies (1978:124-5) although Bicknor's extant church is modern. Walters' hypothesis is based on aerial photographs showing parch-marks of a double-ditched curvilinear enclosure within a semi-circular field on the hillside at Courtfield, opposite Lydbrook and upriver of the modern site. Fieldwalking around Courtfield has only produced a single rim sherd of fourth century Oxford ware to date, but remains of a crude bronze cross were recovered near the adjacent river crossing at Lydbrook (Walters, 1992: 122).

Hentland, with no modern settlement (ST 566 163), offers an alternative siting (Coplestone-Crow, 1989: 92): his identification is based, not only on the name - 'old church' - but on topography. Garth Benni's lands extended 'as far as the black bog beyond the wood and the plain and the water (Wye) and the property of King Constantine across the water' (Walters, 1993: 121-2); Constantine was the father-in-law of Peibio. The area equates to the approximate size of modern Goodrich parish which has a river crossing at Huntsham: the latter, lowlying, fertile area was the site of a Roman villa in which the remains of iron processing were found (Bridgwater, 1962). In modern times the Wye is prone to seasonal flooding in this area which may explain the term 'black bog'. The use of the name Bicknor on both sides of the Wye would suggest the dimensions of the former estate which was subsequently dissected by a discrete section of Offa's Dyke. This structure isolates all the topographical features named in Garth Benni's charter to its west. Huntsham's continued allegiance to the Welsh side of the Wye can be seen in the thirteenth century when the 'men of Huntsham' showed a marked reluctance to attend Forest courts (Hart, 1987: 21).

Garth Benni was dedicated to Dubricius (Dyfrig in Wales), a saint particularly associated with Ergyng and the Wye Valley (Walters, 1993:120-121). The foundation of the house coincides with a period during which much of the land associated with Dubricius in Herefordshire was lost through yellow plague (Davies, 1978:144). Such an event may have been responsible for contemporary reorganisation of the church, with Lugwardine becoming a separate religious focus in northern Archenfield (Coplestone-Crow, 1989:4) and Garth Benni creating a new southern focus. However, the political situation along the borders appears unstable. Eleven Herefordshire churches, which had been confiscated by the Saxons, were subsequently retrieved for

the Welsh church by King Ithel c.745 (Davies, 1978: 113). Ithel also returned Tidenham to the diocese of Llandaff and made further donations of land to religious foundations along the navigable stretches of the Wye (Davies, 1979: 102). Ithels' weir (SO 532 030) lies c.1km south of Llandogo and links across the river to St. Briavels common. Offa's Dyke, dated to the end of the eighth century, ran to the east of these sites. The Dyke may, therefore, in addition to other functions, have also symbolised a contemporary division between the English and Welsh churches.

Welsh monastic houses continued to be founded in the ninth century (Walters, 1993:131). Their concentration along the western banks of the Wye clearly demonstrates the notion of a boundary (Davies, 1982: fig.50). They conform to a pattern, noted elsewhere in Europe, that religious houses tend to be located on the edge of large estates (Costen,M. pers.comm.). A similar linear density occurred in the later medieval period when donations to religious houses focused along the western borders of Archenfield. The estate of the twelfth century Abbey of Margam is seen as a buffer between the Welsh lordship of Afan and the Norman lordship of Kenfig (Williams, 1983: 1:15). In the tenth century, continuing insurrections between petty kings in Archenfield, followed by the kidnap of its Welsh bishop by Danes in 914 (Walters, 1992:128) may have instigated a further relocation of the see from Garth Benni south to Llandogo. There is no record of Garth Benni after 890 and the see continued to contract, focussing on Llandaff by King Morgan's tenth century dynasty (Davies, 1978: 156-9). Although the diocese of Hereford extended to Cone Brook, Tidenham seems to have remained under control of the Welsh church until its tenth century donation to Bath Abbey - after Morgans's death. During the post-Conquest period Llandaff continued to claim rights in the area, receiving ore rights in the Dean and tithes from Newland church. Some Welsh saints' names also survived in the south: at St. Briavels, St.Ewen's (rock) and St. Twrog's island.

A hermitage on the tidal island of St. Twrog, at the confluence of Wye and Severn, was recorded in the thirteenth century (Elrington and Herbert, 1972:75) (Pl.23). Extant remains appear to relate to this period (Townley, 1997: app. xxvi). Remnants of an earlier structure were noted by Scott-Garrett in the 1930s, embedded in an earth bank to the west of the extant doorway (GRO D 3921 11/41). Mortar, pottery sherds and building stone were excavated. Dressed stone blocks found on the

shore suggest a further phase (Townley, 1997:24-25). The damp island location may have dictated a stone, as opposed to timber, structure at an early period. A potential function of manning a navigation light would match that of hermitages and monastic foundations on other islands in the Severn, such as the later Augustinian site on Steepholme (Robinson, 1980:362-3). Inland 'the rocks of Tintern' was the site of an early hermitage, occupied by the sixth century Welsh king Tewdrig (Walters, 1993:124). In the eighth century the 'Ager Louhai' at Tintern was bought by Cynfelin who donated it to Bishop Cadwared (Davies, 1987:179). In the post-Conquest period it became the location for Tintern Abbey.

By the eleventh century only isolated, peripheral sites in Dean, such as hermitages, appear to have had any remaining connection with the Welsh church. Profits from contemporary monastic estates within the Dean were still being directed outside - to Bath Abbey in the south and Gloucester Abbey in the north. Gloucester retained its lands at Domesday and field elevations suggest that it possibly began to expand its territory through reclamation in the Minsterworth/ Cornham area. Bath lost Tidenham which became part of the Marcher lordship of Striguil, but Malmesbury Abbey retained land at Madgetts which conferred fishing rights in the Wye.

Post-Conquest Religious houses

After the Conquest Marcher lords initially used income from existing churches to support alien monasteries. In the Dean these were mainly associated with the Abbeys of Cormeilles, Lire and Saumur. The priories founded at Chepstow, Monmouth and Newent may be seen as politically sited at nodal points; to back up the new regime with its own cultural expressions, in place of existing religious houses. Each had small land parcels allotted in the Dean at the nearest available position. Striguil Priory owned land in southern Tidenham, but, because of Royal Forest, Monmouth's holdings were displaced to the two remaining forest settlements: St. Briavels and Hewelsfield. Pre-Conquest ownership of Tidenham by Bath Abbey was removed and the dues were received by Lire. This connection to France was maintained until the beginning of the fourteenth century, when tithes of the alien churches were redistributed to English priories. None of these new recipients, such as Fotheringhay (Newent) and Sheen (Tidenham) had any direct relationship with the Dean, maintaining an outflowing of its wealth (Townley, 1997).

Consolidation of the Norman regime was followed, in the twelfth century, by the new generation of Cistercian monasteries. Tintern Abbey was founded by the Marcher Lord, de Clare, near his castle of Chepstow in 1131. It enhanced his prestige and was able, as in 1307, to provision the garrison there (Williams, 1984:293). The choice of its location, on the western bank of the Wye, near its confluence with the Angidy Brook, satisfied several criteria; it was rural, secluded and potentially fertile - conforming to Cistercian ideals. The location also had previous symbolism lying below the hilltop which has been identified as the stronghold of former Welsh kings (Eden, A. pers.comm.) and having pre-Conquest religious ownership (above). The foundation grant, however, created a demesne across the Wye into the more politically stable English territory of Dean, with land at Brockweir in the river valley, Modesgate on the plateau, park-land at Halishall (in the parish of Tidenham), together with adjacent fishing weirs. It formed a nucleus which could provide a diversity of resources to sustain the developing Cistercian community, but was marginal to the main bulk of de Clare's estate. This central core was then expanded by assart and acquisition, including widespread mining rights within the forest (fig.67).

Agglomerated land holdings are more easily managed, and exchange and purchase were used to create units which were to the economic advantage of a monastery (Platt, 1969:12-13). Concentration of Tintern's land within the bounds of the diminished Hundred of Twyford may also have had political advantage for the de Clares. Its extent from river to river repeated the earlier pattern of monasteries along the Welsh borders, creating an 'exclusion zone' between the Lordship and the King's lands and consolidating the Striguil boundary. Economically the initial land grant would have had little agricultural value, with later references to assarting (ch.5) showing that much of the early landscape was wooded or waste. The marshy remoteness of Tintern's Woolaston's grange site, together with its unstable river frontage, may also have satisfied contemporary Cistercian ideals of isolation and physical hardship. 'Unencumbered lands on the margins of existing settlement were to become the basis of the Cistercians' agricultural economy.' (Platt, 1969:12).

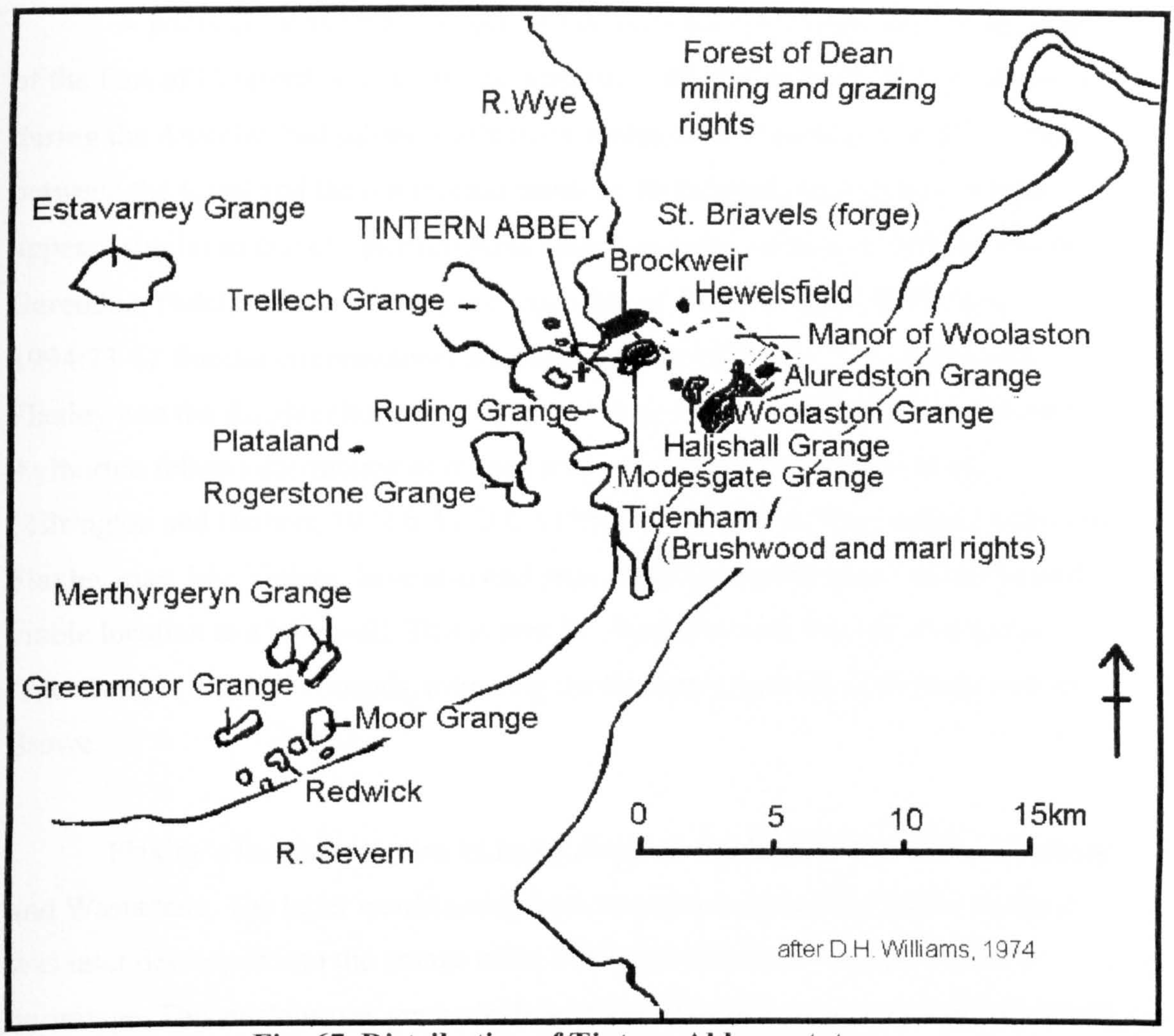


Fig. 67 Distribution of Tintern Abbey estates.

Flaxley Abbey, the only monastery founded within the Dean, also occupied an initially remote location, on fertile land assarted by the king in the Vale of Castiard. It occupied a widening plain below a narrow, meandering, steep-sided valley - below Pope's Hill Roman villa. Only the western range of Flaxley survives above ground as part of the modern manor house. The precinct lay to the north of Westbury Brook which had been straightened and channelled to feed the Abbey Farm, drainage system, fishponds, mills and leats (fig.65). The Abbey church was burnt shortly before the Dissolution but a surviving section of nave wall and its southern doorway is constructed of random stones with weathered soft red sandstone for archetrave. Its poor quality suggests more limited funding compared to Tintern. In the extant building (the guest wing of the Abbey), the 'caen'-coloured sandstone, used for the finely executed vaulting of the refectory, reflects an apparent increase in affluence, but came from a local source at Shapridge.

A political motive may be seen in Flaxley's location, reputedly the death spot of the Earl of Hereford in a hunting accident in 1147. His custody of Dean, donated during the Anarchy, had subsequently been confiscated. Flaxley provided a buffer between the forest and the diminished earldom. Its location, on contentious land, appears similar to that of other religious houses founded on land of dubious tenure. Garendon, Biddlesden and Sawtry are examples of such foundations (Burton, 1994:73-4). Similar circumstances are suggested for Bordesley Abbey of which Flaxley was the daughter house and Llantony Priory's ownership of Alvington and Aylburton follows destruction of the vill and ownership battles respectively (Elrington and Herbert, 1972:6, PRO C 115/K2/66683.f.91)). The precise location of Flaxley may, like Tintern, have also had prior religious significance - as the nearest viable location to a holy well. This is now St. Antony's well, but was denoted as 'Merstow' in Flaxley's bounds, mirroring the boundary position of the holy well at Stowe.

Flaxley's foundation grant included disparate holdings at Walmore, Westbury and Wastadene. The latter would seem, from its name to have been forest waste; it was later developed into the grange of St. White'(Cinderford) which included a hermitage. This nucleus was gradually linked and extended, in a predominantly linear manner, through donation, exchange and acquisition (Townley, 1997:68-81). It included toll-free passage on the Severn (Crawley-Boevey, 1897: 39) and ore deposits on the west, producing an economically viable agglomerated holding (fig.68). For Tintern Abbey, extension of its lands into the warmer, fertile alluvial plain of the Severn Valley also provided a continuous, toll-free, land corridor linking the Abbey with the river, contrasting with the less fertile environment of Wales. 'Consolidated demesne farming was the key to a successful grange and an ideal towards which communities would strive, often over many years' (Platt, 1969:13). Most of Tintern's ten agglomerated granges were established well within twenty years of its foundation (fig.68). By contrast, Williams cites an example of a continuous strip of land at Pyle (owned by Margam Abbey) which took from 1150-1320 to consolidate (1983: 215). Tintern's situation was perhaps unique because of its early foundation, into a landscape in which there was initially no competition from other Cistercian houses. Comparison with other Welsh Cistercian estates demonstrates its compact nature (Williams, 1986: 29-34).

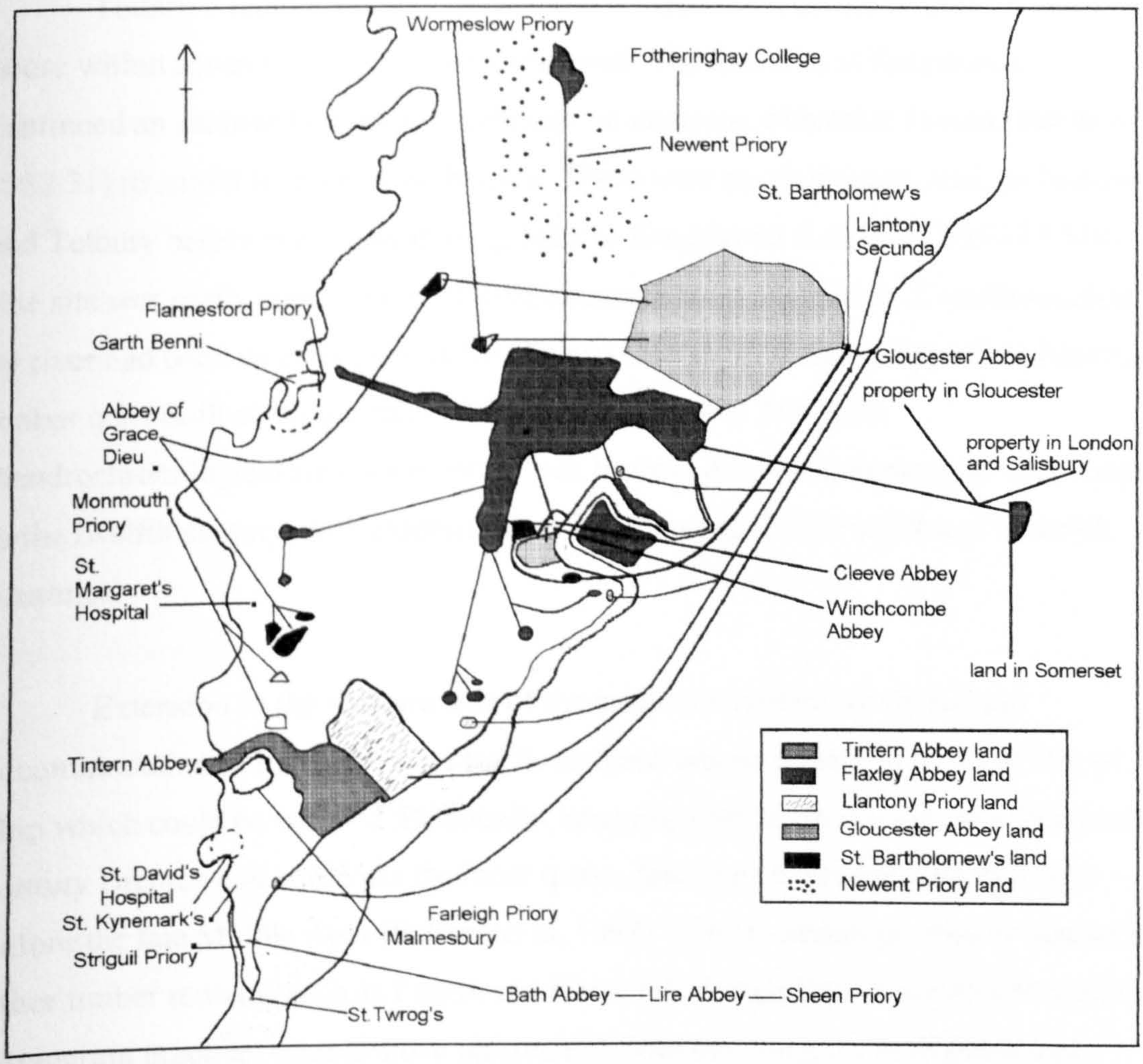


Fig. 68 Post-Conquest monastic holdings (excluding fisheries).

The Abbey derived benefit, not only from an early religious fervour for making donations, but also from the fact that many were on a larger scale and in more favourable locations in comparison with later gifts of land to religious houses. Tintern had received Woolaston church as part of its foundation grant; it was the first Cistercian appropriation in England and received tithes from 1160 - the process could be long and costly and many other Welsh houses had to wait until the thirteenth or fourteenth centuries before deriving pecuniary advantage (Williams, 1984:332-341), Grace Dieu, the last of the Welsh Cistercian foundations, was rebuilt on several sites around Monmouth after sacking by the Welsh because of disputed land ownership (Harrison, 1998:26-28). It entered a crowded landscape with established economic units and was only able to obtain small, scattered and largely uneconomic landholdings. In the Dean these were located on the western margins which produced consistently lower agricultural returns, though Penyard was associated with iron and was upgraded to the status of a manor (Williams, 1984; 225-226, 243).

Tintern's rapid economic growth can be seen in its ability to found a daughter house within seven years of its own foundation. The location, at Kingswood, continued an eastward expansion, although, in common with other houses (Beeftink, 1982:31) its initial location was changed. There were two temporary sites, at Hazelton and Tetbury before eventually moving back to Kingswood (Lindley, 1955:117-118). The site was easily accessible by toll-free passage from Woolaston. Communication by river had been an early priority for Tintern seen in the construction of a substantial timber quay built at Woolaston Pill (Fulford et al, 1992: 101-122). Dendrochronological analysis of extant oak timbers date the first phase at Woolaston to the twelfth century, with extension and repair during the thirteenth and fifteenth centuries.

Extension to the seaward side of the original structure would suggest accommodation of increased river traffic as there was no benefit in terms of size of ship which could be handled. Potentially, seagoing craft up to the size of a fourteenth century Bremen cog could use the inner quay - few ships exceeded 30m in length before the late Middle Ages (Fulford et al, 1993). The up-stream position is similar to other timber remains such as Purton and Horse Pill. It suggests similarities to modern navigation practice: vessels move upstream in convoys using the tidal thrust and following the headwave to maintain sight of the channel and avoid obstructions. Rising tide levels and the construction of an undated stone-built quay higher up on the southern side of the pill (found by the author), may explain the quay's eventual abandonment.

Woolaston Grange

Woolaston's quay was only one feature in a locality which has undergone little change since the medieval period until the last part of the twentieth century. The Grange spanned the period from the early establishment of Cistercian granges to the Dissolution. It therefore offered an opportunity to try to identify a complete extent of grange development and ways in which this small, defined part of the landscape was adapted or modified by monastic requirements and interacted with its hinterland. Its fisheries, south of the quay, are discussed in chapter seven.

The quay marked the termination of a cross-peninsular route from Tintern's Abbey ferry, strongly paved on its western, Wye slopes but cobbled around Grange Pill. An atypical scatter of stones along the rock ridge in the intertidal zone at Woolaston suggests remains of an extension to the quay itself. The route was only one of a series of well-metalled roads radiating from Tintern's precinct (Williams, 1984: 230-1) providing comprehensive infrastructure across its estates. The complex horizontal quay surface at Woolaston Grange contrasts with the steeply sloping cobbled medieval slipway at the river crossing at Purton. The latter could be used at any state of the tide and continued in use in the post-medieval period. Although there is no indication of the nature of the superstructure at Woolaston a heavy investment in time, expenditure and effort are indicated by its extant materials and the difficulty of construction in an unstable environment.

Iron ore and pottery, dated to the twelfth century, were found on the foreshore on a similar horizon to that of the roadway (Allen, 1996) and suggest that some of the earliest income of Woolaston Grange may have come from the iron industry. Remains of a stone quay at Hill Pill across the Severn (Allen, 1993: 257) suggests a possible trade route and analysis of ore samples found there appear to have a Forest origin (Allen, 1996: 228). Other commodities found within Woolaston's quay timbers include a variety of local stone, tiles and worked masonry. Limestone was recorded as a delivery to the grange in 1411 (Williams, 1983:72). It suggests that heavy cargoes were being transported.

No contemporary boat has been found in the area. A flat-bottomed medieval vessel found at Magor Pill had been used to transport iron (though not from the Dean) (Nayling, 1996). An undated boat, found by the author in 1988 appeared to be carrying an equally heavy cargo of limestone, and was also flat bottomed (Parker, 2000). Further research by the author noted that this boat was lying in a carefully constructed mud dock (to be published). This arrangement allowed boats to be supported safely in close proximity to the stone quay (above) as the tide ebbed. The rocky basin around the medieval quay suggests that loading and unloading may have taken place at high water to protect contemporary vessels.

There is no evidence of any storage facility near the quay. This must have been provided at Woolaston Grange itself which is located c.0.5km inland, on solid geology to the north of an alluvial valley. High Woolaston, c.1.25km up the hillside above is suggested, by excavation, as the site of the medieval village (Scott-Garrett, 1932:10). The dimensions of the quay timbers suggest the contemporary availability to Tintern of large trees. Similar timbers appear to have been used for construction at the Grange itself. Redundant timbers were found by the author, in 1999, within the walls of an eighteenth century barn (now demolished) (Pl.24). Dendrochronological analysis proved unsuccessful due to the managed nature of the timber. However, it was dated to the twelfth century by the jointing style (Worthington, pers. comm.) (Pl.25). Scorching and soot deposits suggest involvement in a fire, perhaps related to a destruction caused by Welsh incursions in 1411-12 when tiles for re-roofing suggest a more fireproof replacement (Williams, 1983:72). The same barn revealed re-used pieces of finely-sculpted segments of door jambs, made of honey-coloured stone, which is not of local origin (Pl.26). Similar stone (resembling Caen) was used at Tintern Abbey itself, originating from quarries at Dundry, south of Bristol (Knight, J. pers. comm) and could easily have travelled upriver to the Grange as well.

Further, weathered, medieval stonework was recovered by the author from the matrix of the western barn at the Grange which was recorded in 1789 (GRO D 2700). Complex features in the walls suggest numerous phases in the structure, including upper storeys, but demolition and reconstruction was too advanced to allow adequate analysis or recording. Barn slits and domestic windows suggested changes in use: an Elizabethan window was a secondary insertion into a window space in the western wall. Wall scars and a pavement, excavated by the author, below the window show the structure to have originally been a large-scale barn (Pls.27, 28) erected adjacent to a leat which fed a mill in the extant southern barn. An earlier course for the leat continued along the contour (fig.69) and terminated at an unrecorded post-medieval mill on Ley Pill upriver (Fulford, 1993).

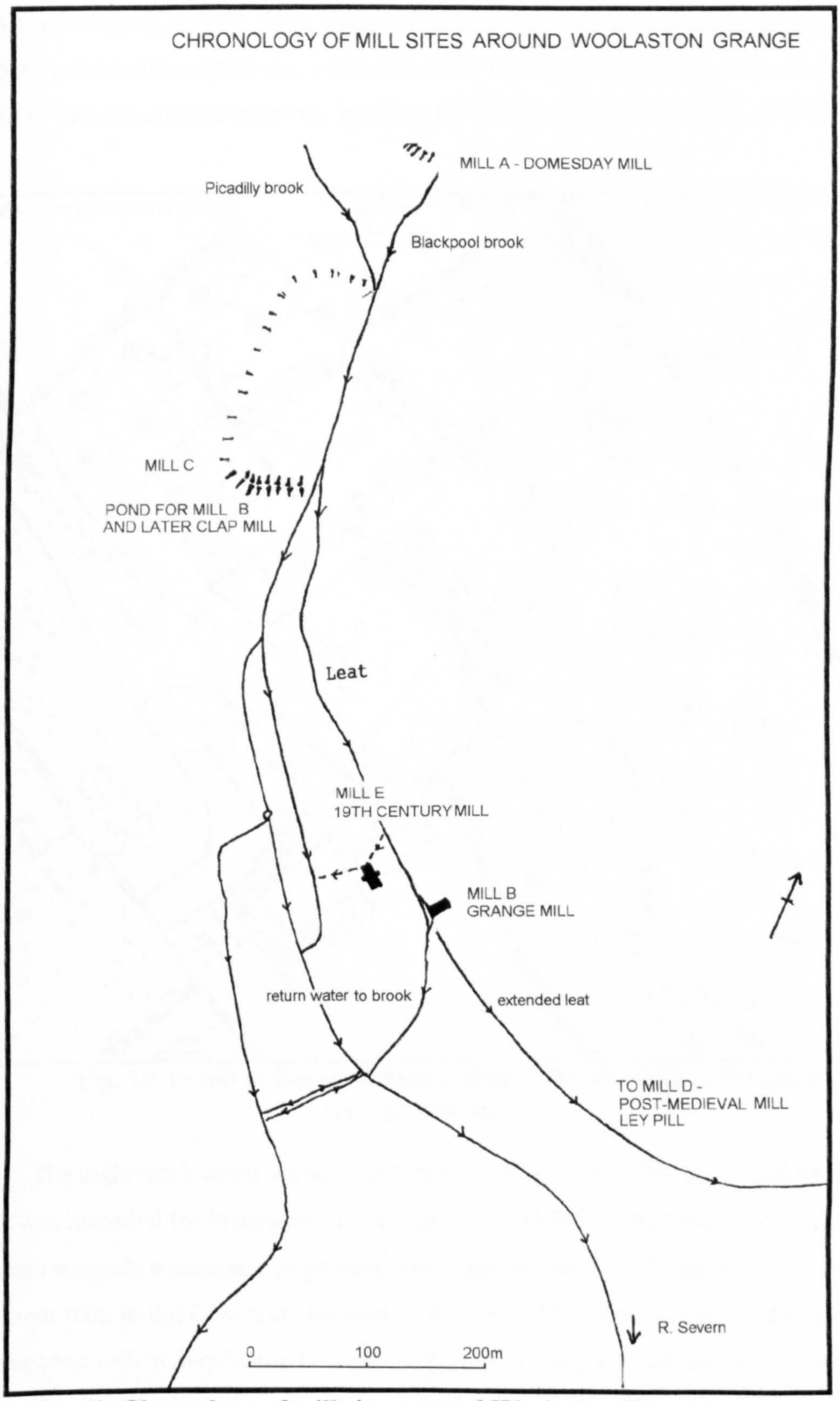


Fig. 69 Chronology of mill sites around Woolaston Grange.

Map regression suggested a former mill at SO 588 983, and excavation by the author revealed that the shallow remains of a paved section of the leat extended under

the site of a barn (GRO PC 840): the mud lining of the rest of its course suggests that the barn predated the extension, necessitated the paving (constructed with re-used slabs) to prevent erosion under the building by the new watercourse (figs.70,71,Pl.29).

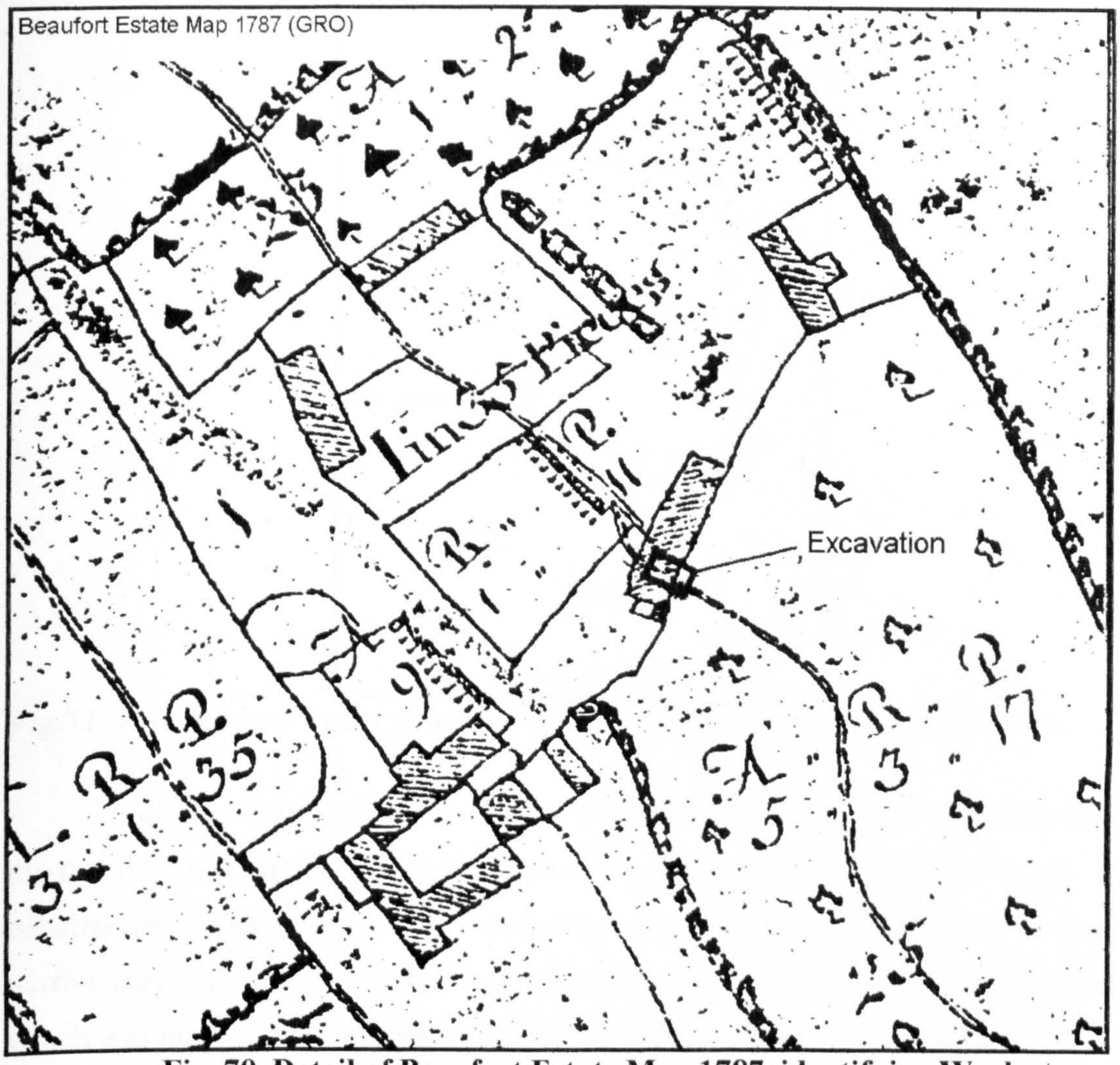


Fig. 70 Detail of Beaufort Estate Map 1787, identifying Woolaston Grange mill site.

The eighteenth century map illustrates a former 'Clap Mill' at ST 584 987, and a mill was recorded for Woolaston at Domesday - both have extant earthworks. The evidence suggests a sequence beginning with a shared use of a village mill which was consistent with initial Cistercian ideology (Williams, 1986: 286). This was followed by a separate mill at Woolaston Grange using its own, larger, millpond. In the post-medieval period the leat was extended to a further mill in a different location and the Grange millpond was re-used for an associated 'clap mill' before a final re-use of the leat for a second (eighteenth century) mill at Woolaston Grange itself (fig. 69).

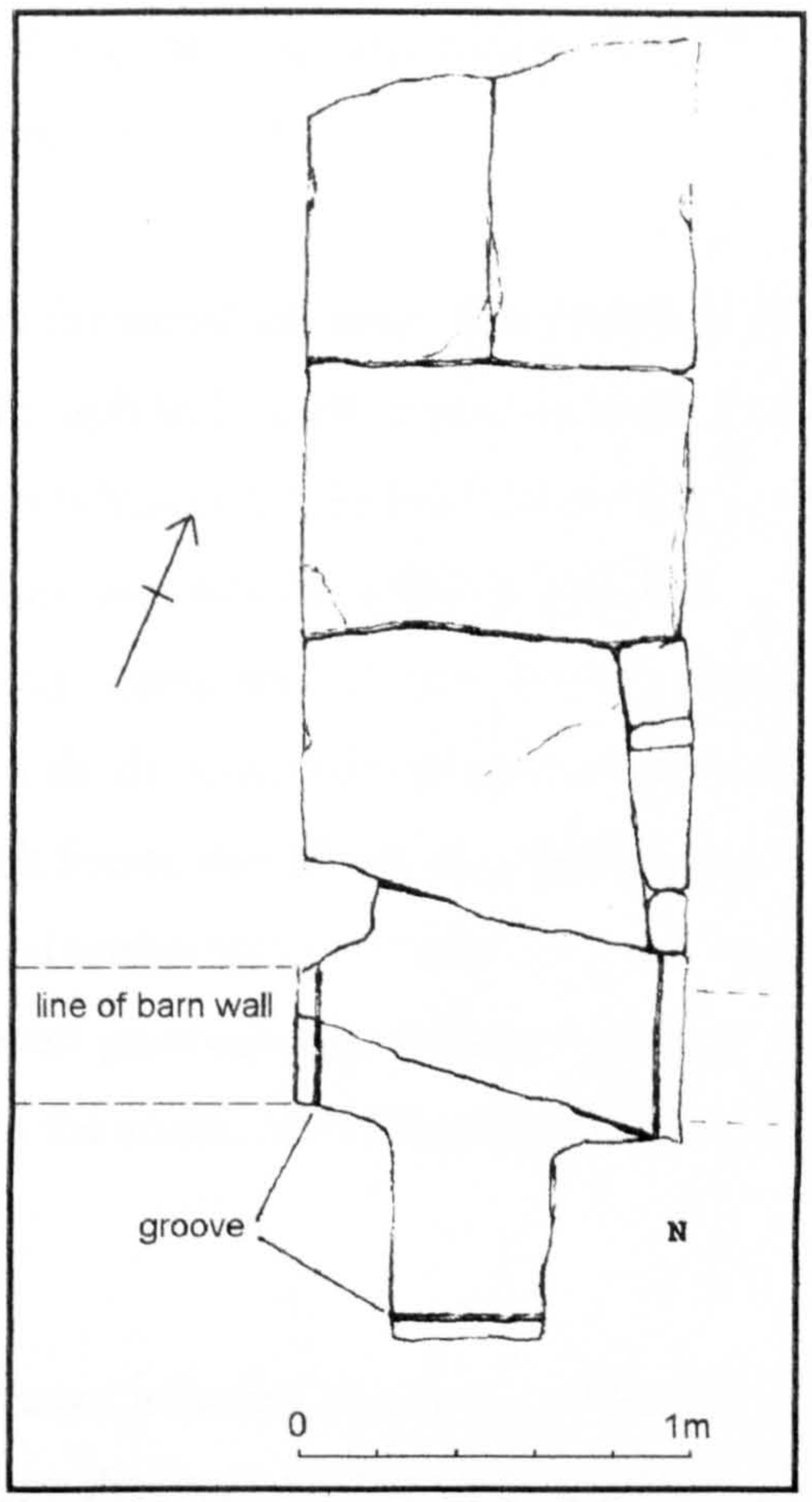


Fig.71 Plan of stone lining of leat under mill building at Woolaston Grange.

Location of the millpond below the village mill would not have interfered with the function of the latter and allowed harnessing of an additional stream. A stank construction (blocking a natural watercourse) utilised the natural embankments in a narrow part of the valley at a distance from the grange buildings. Use of the alluvium, which was protected by seabanks, can be seen in reorganisation of the natural watercourses in the lower valley by straightening the Black Brook and providing drainage channels around ridge and furrow. In view of the riverside location, the complex of fishponds created in the alluvium (ch.7) must indicate status rather than economic necessity. On typology they would seem to date to the thirteenth century, a phase of upgrading also seen in the Grange chapel. Platt states that early granges had a purely economic function, were not scaled-down versions of monastic precincts and had no need of a chapel as lay brothers could use local provision (Platt, 1969:16-29). Williams suggests that they were initially supplied with oratories, agreeing that chapels were a later, thirteenth century development, but with some degree of regional

variation. South eastern Wales had a concentration, with 70% of Tintern's granges owning a chapel (Williams, 1984:235).

At Woolaston the thirteenth century triplet window (Pl. 30) represents a secondary phase, seen through wall scars in photographs (courtesy of Rev. D.Williams) and sketches (Ormerod, GRO D 726/3), suggesting a pre-existing structure. Although the building was demolished in 1969 a (consolidated) archway remains. The quoining and stonework indicates that the chapel was built as part of the adjacent structure (now a shed) which can be seen on the eighteenth century map (GRO PC 840) and which forms part of a quadrangular layout of buildings. The chapel lay above a vaulted undercroft in which there was both a piscina and the remains of unspecified wall paintings (Scott-Garrett, GRO D 3921 11/41). Access was gained by steps from the south, with the chapel accessed from the roadway to the quay on the north.

A location of a chapel adjacent to a river crossing is similar to that of other religious foundations along the river: St. Margaret's chapels at Beachley and Bigsweir, the churches at Newnham (where an anchoress operated the ferry), Minsterworth and Lydney and the chantry at Purton. The latter was founded by the lords of Berkeley (Curry, 1996:64) and re-used masonry was found by the author, rebuilt into the extant barn. Foundations of an earlier structure could be seen under the southeastern corner of the barn. The chantry gained income from operation of the crossing. Woolaston's location may suggest that some income was being obtained from secular use of the quay, in common with the ferry operated from Tintern's adjacent grange at Aluredston. The latter was a late acquisition, donated in 1302 by Bigod who also gave Tintern judicial powers. Local operation of these can be seen in the stock at Woolaston and in the fieldnames 'Hangman's field' and 'Jailer's orchard' (Williams, 1983:248-9). All Tintern's other landholding in Dean became part of the 'Manor of Woolaston' which encompassed five granges, three mills (plus that found by the current author) one thousand acres of arable and one thousand acres pasture and meadow by the Dissolution (Williams, 1983:243).

Its central role may explain the upgrading at Woolaston Grange itself producing a layout which represented separate spheres of activity (fig.72). Structures

which indicate status lie to the south of the road, perhaps ranged round a quadrangle as indicated on the map of 1789 (GRO PC 840): working and storage areas were located near the ridge and furrow to the north. The arrangement resembles that of a monastic precinct with adjacent home farm. Its apparent establishment by the end of the thirteenth century must reflect the results of an earlier and successful economy.

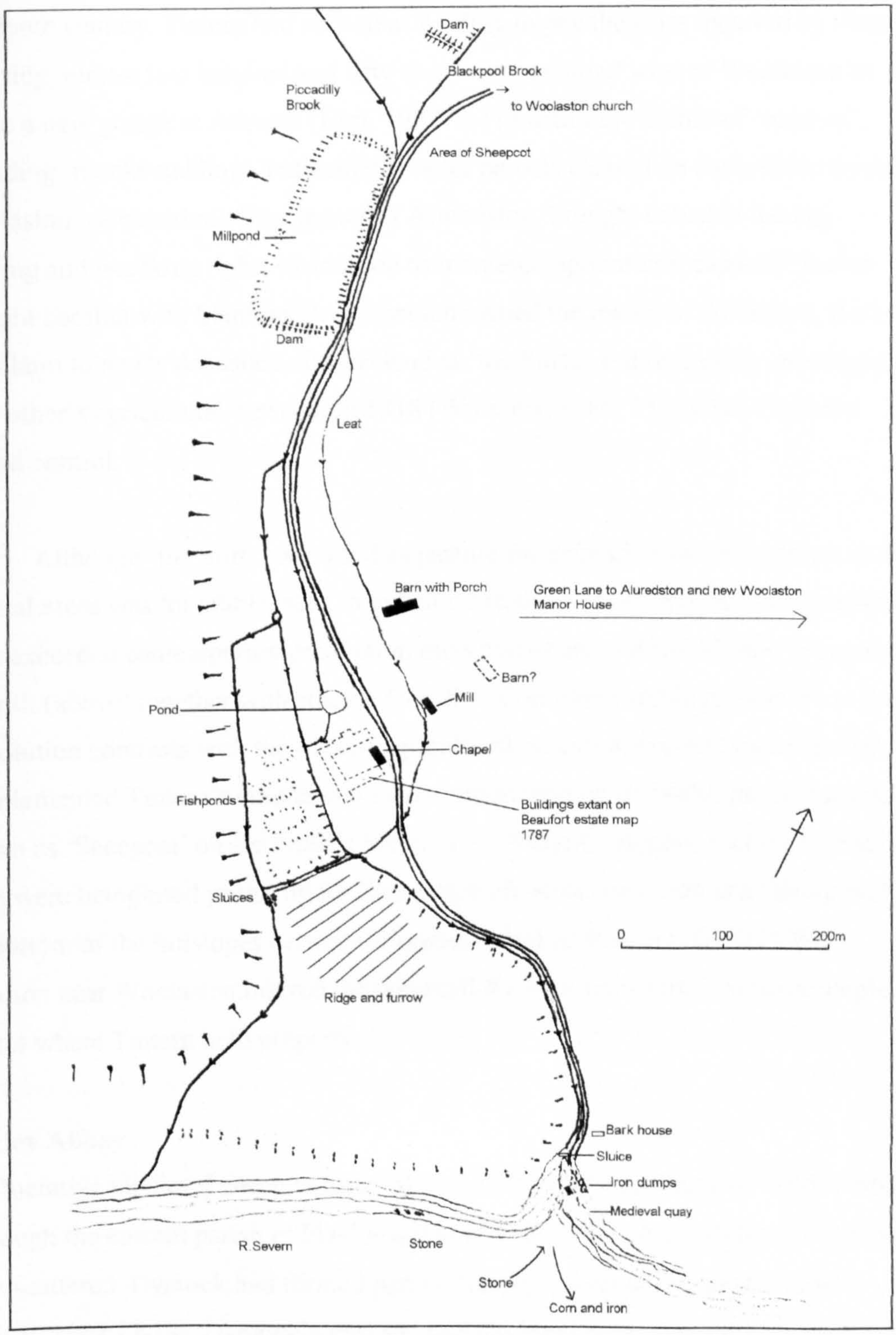


Fig. 72 The layout of Woolaston Grange, illustrating its relationship to, and modification of, the local resources and topography.

Monastic Agriculture and Resources

Lack of inclusion in the *Taxatio Ecclesiastica* means that the early economy of Woolaston is unclear; Tintern's greatest income in the document was attributed to its nearest granges of Triket, Rudding and Rogerstone. However, it is clear that, in common with secular practice, Dean estates were being expanded during the thirteenth century. Tintern had sufficient funding to pay the fines incurred by illegal assarting; almost two hundred and fifty acres were assarted west of Woolaston to create a new grange at Ashwell (Hart, 1987: 9-11) with field names of 'rudding', including 'monks rudding', indicating smaller parcels cleared on the hillside north of Woolaston. Acquisition of the manor of Aluredston, brought valuable fishing, ferrying and wrecking rights in addition to increased agricultural capacity. It also brought conflict with Llantony Priory, which owned the manor of Alvington. Both laid claim to newly deposited alluvial land at 'the Stirts' and repeatedly sabotaged each other's agricultural assets until 1318 (Williams, 1984: 255) when Llantony gained control.

Although 'the Stirts' was used as pasture the primary monastic interest in the alluvial areas was for arable, seen in extant ridge and furrow. Woolaston's production rates exceeded contemporary production rates elsewhere and would have necessitated the mill (above) together with storage facilities. Continued arable production to the Dissolution contrasts with the overall agricultural pattern along the Severn littoral, but complemented Tintern's emphasis on wool production on its Welsh lands. An area known as 'Sheepcot' on the hillside location of Madgetts suggests that the thin soils there were being used primarily for livestock with processing seen at a fulling mill at the bottom of the hillslopes between Woolaston and Aluredston (GRO PC840). Location near Woolaston offered the potential for river transportation to the staple at Bristol where Tintern held property.

Flaxley Abbey

The lucrative medieval sheep industry also featured in the economy of Flaxley Abbey. Although the current parish of Flaxley defines its demesne, its agricultural businesses were scattered. Dymock had formed part of Flaxley's foundation grant (Crawley-Boevey, 1897:17-18). Dymock's mill site and the great cruck-framed barn extant at its grange (now a golf course) suggest a primary concern with corn production, though it

was leased out by the Dissolution (GRO D4317 90). Specialised sheep breeding and wool processing took place around nearby Kedford from 1227 (Gethyn -Jones, 1966:3) (Ch. 3). Further pasturage in the Cotswolds around the Brimpsfield area gave access to the Cotswold industry, including a sheep run through its Climperwell estate which was donated by Abbey Dore (Crawley-Boevey, 1987:75). Flaxley was still acquiring land there in 1491 (Rudd, 1937:220).

Regilbury, in Somerset (ch.6) was a further deliberate thirteenth century acquisition, together with other estates near Chew Magna; its sheep and minerals made it one of the Abbey's major assets in the *Valor Ecclesiasticus* (Crawley-Boevey, 1897: 47-9). Regilbury's location centred on a medicinal spring, 'St. Andrew's Well' (Collinson, 1791, Vol.III: 570) reminiscent of St. Antony's Well near Flaxley. This dispersal of Flaxley's economy contrasts with its earlier policy of agglomeration and may have been necessitated by local restrictions imposed by the extended Forest. One result of the latter was the curtailment of its timber rights, limiting it to managed woodland in Abbot's Wood near Littledean (ch. 5) near its main iron production sites (ch.6).

Some sheep were kept locally, with Flaxley's two folds in Newnham (Crawley-Boevey, 1897:docs.24, 40) suggesting distribution of the products by river. Newnham would have provided a local focus for the Abbey's business interests and Flaxley eventually obtained lordship of the vill, although it also owned land in London (Curtis, 1934). Other monastic houses held property around Newnham: the Abbeys of Gloucester and Goldcliff, the Knights Templar (at Temple fields), the 'Hospital of Jerusalem', the priories of Winchcombe and Llantony and St. Bartholomew's Hospital (Gloucester), with a 'Lazar house' outside the walls (Crawley-Boevey, 1897:doc.40). St. Bartholomews' properties were distributed around Newnham, Littledean and down to Awre. The landholding was maintained until modern times with Gloucester Corporation as trustees of the estate (Elrington and Herbert, 1972: 42). Although there was clearly a market in animal products (ch. 4) iron would seem to have been the main monastic interest - Llantony's forge at Newnham is documented from the twelfth century (PRO C115/K/A) - with nearby Littledean the principal iron market on the east of Dean. Flaxley's granges of St.

White's and Littledean lay to the west and south of Littledean forming a continuum with Abbot's Wood.

Flaxley's iron interests (ch.6) would seem to form the basis of continuing interest by the post-Dissolution Abbey estate. Although ostensibly a poor house and the first to be dissolved in Gloucestershire, Flaxley was given to the Lord Chamberlain, Kingston, who already had interests at Painswick (Crawley-Boevey. 1897: 88-9). Cotswold property, together with Regilbury and Arlingham, were sold off soon after acquisition. Controversy over ownership of the Dymock estates, supposedly illegally leased by the Abbey in anticipation of prospective closure, was eventually restored to the lessee by a bizarre series of marriages and deaths (Platt, 1969) and was also lost to the Abbey estate. On Kingston's death the bulk of the estate passed to the Dutch family of Crawley-Boevey who expanded the iron industry throughout the Flaxley valley (Townley, 1974).

Flaxley's lands around Littledean were leased, with the estate of St. White's gradually eroded for building during the last century. The Abbey estate still receives ground rents from the houses over the majority of modern Cinderford. Littledean Grange was demolished in the 1960s when its lease from the Abbey expired. Its manor house had been constructed from the demolished stonework of the Abbey. On regaining control of the manor much of this stonework was restored to its earlier origins and now forms a wall beside a canal in the garden (P. Watkins. pers. comm.). Shaped stones were not required and were deposited in the old grange pond and recorded by the author when the pond was excavated during 1997 (Townley, 1997: Pl.30). The survival of Flaxley's estate therefore appears to relate to economic stability and potential in similar manner to the survival of Woolaston's lands as part of the Beaufort estate.

Gloucester Abbey

At the Dissolution the Benedictine Abbey at Gloucester also retained rents from the original nucleus of its Dean estates, after its transition into a cathedral. Pre-Conquest hunting interests in the north of Dean gradually concentrated into parkland at Highnam as the Abbey progressively cleared its western woodlands throughout the thirteenth century (ch.6); a further park lay at its manor of Bullo. Highnam had been

embellished with a series of stanks (ch.7) and a chapel (Elrington and Herbert, 1972: 15) and functioned as a potential retreat for the monastery in case of plague in the city. Seven Domesday ploughteams had doubled by 1291 with further grain production at Churcham carried via the Severn from Duni. Increased processing needs were accommodated by major landscape re-organisation, diverting the Severn to a mill at Lassington - and creating future flooding problems (Elrington and Herbert, 1972:24). Wine was also produced at Over on the south-facing slopes of a moated site, a similar position to Flaxley's vineyard at Walmore (Crawley-Boevey, 1897) Gloucester's industrial interests were more distant, nearer the resources at Ruddle (Elrington and Herbert, 1972:42) and Weston-under-Penyard, the latter purchased from Grace Dieu in 1246 and 1267 (Williams, 1984:328). Neither was retained after the Dissolution, in common with the Dean estates of other smaller monastic houses which did not have a viable economic base.

Llantony Priory

The Priory of Llantony Secunda had created a scattered series of manors in the Dean during the thirteenth century (Curry, 1996:67), with the Severn providing a link. The joint manors of Alvington and Aylburton comprised the largest economic unit, some twenty miles from the monastery. Apart from its Newham property (above) Llantony's other holdings at Archer's Hall (Lydney) and Sollars (Westbury) remained small and discrete, adjacent to larger centres and with no known chapels (Elrington and Herbert, 1972:66,88). Archers Hall had originally been granted to Kenilworth Priory in 1204. Sollars consisted of two messuages, two gardens, one hundred and thirty acres each of arable, meadow and pasture with one hundred acres of furze and heath, plus common pasture in Westbury and the Lea. Ratios compare with land use recorded for Woolaston's grange, though on a reduced scale, and suggests these may have been the preferred proportions for independent holdings.

Distribution of Llantony's lands appears similar to a pattern noted for Augustinian priories; 52% of land worth over five pounds lay within ten miles of the controlling mother house, with a manor set up to provide a focus for control over more distant assets (Robinson, 1980: 323). Alvington Court (SO 611 007) provided such a focus in southern Dean, located on a holloway leading to the port of la Were on

Wose Pill. The port provided income from iron and timber exports as well as port dues (Hart, 1987:52). A local market does not appear to have been successful.

Newent Priory

Successful commercial interests can, however, be seen at Newent Priory whose market was granted by 1253 (Finberg, 1955:61) moving trade from the drove road which formerly ran through Dymock. The majority of its holdings lay outside the widest bounds of the forest, including a share in Dymock woods with Flaxley Abbey (GRO micro 632:77-91). It was the Prior who had been given responsibility for creation of the borough, which was in existence by 1298 (Leech, 1981:58). Like Newnham it was a planned town, seen in the regularity of its burgage plots, which originated in Broad St. near the stream. A linear earthwork curving to the north of the church may suggest some defensive structure also seen in the names 'Lewall' St. and 'Burybar'. Contraction of the forest boundary in 1306 allowed expansion of the borough, and success can be measured by the fourteenth century Lay Subsidy when burgesses recorded one of the highest tax returns in the county (Leech, 1981: 58). The Priory itself declined with only the Prior and one monk in 1305. It was fined and confiscated in1385, passing to Fotheringhay College, Northamptonshire, in 1411, in whose hands it remained until the Dissolution (PRO E 109/9/1). Priory remains have been lost under the development, but are thought to lie near the church with monastic ponds now part of the extant lake (Leech, 1981:59).

The extended forest also affected the direction of expansion of the secular Talbot estate, which skirted the northern boundary. Although they made individual donations, such as Coketon (Coughton) to the Prior of Wormesley by 1300 (Duncomb,1996: 371), their own foundation, Flanesford Priory (1346) lay on the forest boundary at their manor of Goodrich. The small parcels of associated land across the Wye at Stowfield (Lydbrook), may reflect earlier monastic landholding by the pre-Conquest estate of Garth Benni. It would seem to confirm the identification of the earlier monastery as being at Courtfields (above). Proximity of the forest boundary also appears to have impeded the eastward expansion of foundations along the Wye. The donation of Stowe Grange to Monmouth's Cistercian Abbey of Grace Dieu in 1226 would seem related to the existing religious significance of its holy well (Williams, 1984:203). It was also one of the local granges, like St. White's and

Penyard, which absorbed eremitical sites (and possibly personnel), part of a general trend in Europe from the twelfth century (Williams, 1983:232).

Stowe Grange and other monastic holdings

Stowe was a grange of the Cistercian monastery of Grace Dieu at Monmouth. The site of the grange is clearly defined by a low bank, with remains of a small cell identified as a chapel by adjacent burials. Limited excavation (Pl. 32) suggests buried remains and the potential for future research. The site is dry and sloping, with a northern aspect and offered little agricultural prospects. Loss of grazing, through local woodland clearances and crop damage, through deer spoilage, were reasons given for its economic failures, but by 1338 it was allowed to rent and enclose waste at Wyegate (Williams, 1984:214). Viability may be related to the apparent move northwards of the deer herds, noted by the author (ch.5). Wyegate reinstated the pre-Conquest monastic estate held by Pershore, but the grange still remained poor until the Dissolution.

Unlike the other Cistercian monasteries Stowe did not operate any local mining rights, in spite of its proximity to the major iron deposit at Clearwell. Crown reservation of the resource for its military needs at St. Briavels is likely to have been a reason. Grace Dieu's own iron was restricted to land around Weston-under-Penyard, possibly using the cinder deposits there (ch.6), but constant rebuilding costs at the mother house in Monmouth forced its sale to Gloucester Abbey (above). Monmouth Priory also had interests in Dean with its northern property, including Huntley church by 1291 - the area had been under control of Monmouth since Domesday (Morris, 1982: 32.6). By 1215 Monmouth had abandoned its interest in Awre church (donated in 1140). The subsequent owners, Llantony Priory, appear to have had problems of upkeep. The chancel was 'twice built' in 1377, perhaps related to earlier financial difficulties; immediate relief had been requested after its acquisition in 1351 because of losses incurred through the plague (Curry, 1996: 9).

The contemporary social and economic changes to secular society would have also had impact on the Dean's other religious houses, with a reduced population to contribute both physically and financially to their upkeep. Alvington church appears to have been in a similar state of disrepair by the 1390s (Williams, 1983:343).

Attempts to boost fourteenth century economies through increase in fishing weirs by both Flaxley and Tintern Abbeys (ch.7) appear to have had little success. In common with local Crown initiatives (ch.5) and monasteries elsewhere, the religious houses of Dean became increasingly reliant on rental income from their agricultural lands. In the later medieval period they concentrated on producing profits from the wool and iron trades.

Conclusion

The religious sites in Dean mirror its changing political landscape. There appears to have been continuity in use of areas which had had former religious significance. Some remnants of the Roman church may have remained into the fifth century in common with centres along the Severn Estuary, but by the sixth century it had been replaced by the Welsh church. Welsh petty kings were able to donate land for monastic use, placing houses in politically significant locations, either near former centres, to indicate change of regime, or along territorial borders. This Welsh church was only gradually pushed back into Wales by Mercian expansion. Placement of members of the Mercian royal family in major, minster, foundations ensured political support for its new regime. Documentary evidence and a dual symbolism between Welsh and Saxon ideology, such as at Newent, suggests a period of instability with change back and forth between the two cultures. By the eighth century final Anglo-Saxon domination brought the majority of Dean into the wider sphere of the Northumbrian church via its links with Worcester and Gloucester. Dean's diocese was administered from Hereford, but Gloucester had major monastic foundations, with estates extending into the Dean. Land parcels also supplied distant foundations, such as Pershore Abbey. The location of such lands appears to have some correlation with earlier Christian sites, such as Lydney, or ancient pagan sites, such as wells, which continued to function as centres for superstition into the modern era.

By the time the last remnants of Welsh religion had been removed at Tidenham, Wessex had begun its own control network, this time through manorial churches which ensured local loyalties. Westbury was identified as a minster church by the large area of its territory; this encompassed Newent, for which a larger number of criteria can be found, indicating that it too had been a minster. Westbury may therefore indicate the political domination of Wessex, placing the focus of religious

control in its new territorial centres, but maintaining earlier Anglo-Saxon foundations. At Domesday existing churches survived the change to Norman control, but their incomes were used by the Marcher lords to support alien foundations. After consolidation of the Norman regime through castle construction, the lord of Striguil was one of the first to begin a new wave of monasteries, based on the Cistercian rule, at Tintern. Location seemed to reflect a continental pattern, also noted in the arrangement of Welsh churches, by using land peripheral to the estate and designating its boundaries. Ideology which necessitated such remote locations for Cistercian houses would not have caused conflict with existing manorial foundations, although several incorporated hermitages or sites which had had some former monastic association. The economic success of Tintern Abbey reflects its early advantage with sufficient investment in its estates, infrastructure and tithe funding to create a highly efficient unit.

Although there is no proof, the author suggests that, given the unstable political situation in the borders, the deliberate acquisition of Woolaston by Tintern Abbey may have provided a level of insurance as an alternative site in case of future trouble. It was at a similar distance from the benefactor's seat at Chepstow and there was a high level of investment to provide similar facilities, including riverine access and mineral resources. Woolaston's similar layout to Tintern could have allowed an easy transition of administration, with its land corridor allowing continuity of communication with Abbey estates from a more politically stable site on English soil if necessary. Such a hypothesis would not be incompatible with other local monasteries which changed location. The timing of Woolaston's acquisition could also offer an alternative suggestion as a potential daughter house, in similar manner to the contemporary Kingswood Abbey. Retention as a grange, of a site originally designated for a separate house, would be similar to the situation of Trawscoed Grange belonging to Abbey Dore (Williams, 1983:212). The self-sufficiency at Regilbury may have offered a similar potential for Flaxley Abbey. Its thirteenth century acquisition came at a time when local economic activity in Dean was being increasingly restricted and engulfed within the extended forest and its repressive laws.

The industrial interests of the monasteries, particularly Flaxley, (ch. 6) indicate that, before checks were imposed, they were responsible for large areas of

woodland destruction. Both Tintern and Flaxley continued to assart into the fourteenth century, accompanied by enforced coppicing, but by then economies centred on wool appear to dominate. Original policies of agglomeration of land for agriculture appears to have been followed by more dispersed, specialised units, particularly for iron production. Fishing (ch.7) had provided a constant food source and income and monastic fisheries dominated both rivers throughout the medieval period, though, like land, they became increasingly subject to leasing.

Apart from Gloucester Abbey's use of its warth around Mortune, known later as Minsterworth, none of the local monasteries appear to have been active in land reclamation at their riverine properties. Their role seems to have been mainly one of upkeep and management. They were active in reorganising inland watercourses to improve efficiency for domestic or industrial purposes. An agricultural landscape was maintained on the majority of Cistercian lands with industries and business interests concentrated near local towns Other orders were responsible for the layout of many of these peripheral centres and played an active part in land and river trade links, particularly from Newnham. In the later medieval period many of these monastic estates, such as Alvington, were virtually dismembered through leasing, which became a major source of income for the monasteries. It enabled an easy transition to post-medieval land ownership on a local basis. The large agricultural Cistercian estates adjacent to the central forest core, which had been used for pasturing sheep, ensured a predominantly rural continuity throughout the medieval period, and one which has lasted until modern times.

CHAPTER 9: CONCLUSION

Both archaeological and documentary evidence indicate that the medieval Forest of Dean was not the isolated, idiosyncratic area of popular impression. Its monuments and earthworks conform to contemporary elements found throughout England, both in form and chronology. There are manors, castles, churches, moated sites, monasteries, granges, boroughs, parks, chases, fishponds, field systems and ridge and furrow; even specifically designated features such as Offa's Dyke or 'Forest' are only individual examples of similar cultural expressions throughout the country. Nor did the rivers constitute a physical barrier that isolated medieval Dean. Quays facilitated access to destinations both in England and abroad. Fords, ferries and bridges provided fixed cross-river links.

These links to the outside world demonstrate one of the factors which affected the Dean's development; its use as a resource by outside agents and a lack of cohesive internal investment. Outside interests were clearly being furnished during the Roman period with iron ore carried to the periphery of Dean for either processing or export. The 'Dean road' could have provided a central north/south arterial route to co-ordinate ore removal. Although transportation of a heavy commodity would normally have been a prohibitive factor, the nature of the Dean ore compensated in its high percentage returns in processing. Peripheral processing would have perpetuated both an itinerant model of production in the Dean itself, seen in the linear patterns of its early extraction sites, and a low internal population. This, rather than a shortage of fuel - which evidence suggests was already coming from managed woodland (coppicing) - could explain the exporting of the forest iron. The Severn provided an ideal means for long-distance transportation of the heavy material and extant tracks and holloways demonstrate a distinct orientation towards the rivers.

During the Roman period little change can be detected in the underlying social organisation of Dean; this had formerly been fragmented and focussed on its peripheral hillforts. The sheer acreage of land surface pitted or despoiled in the central, western and northern Dean, together with timber procurement which had clearly exhausted natural resources, would have devastated the potential for

contemporary agriculture or settlement development in these areas after mining had ceased. Place-name evidence suggests a survival of small populations in proximity to each of the scowle areas which may have continued a low level of iron production in the post-Roman era. These populations may either have been supported by a pastoral regime or through a symbiotic relationship with agricultural settlements in the east. Along the highly dissected Severn littoral a linear arrangement of settlement utilised areas defined by the numerous watercourses, with concentrations of population around promontories. Settlement distribution was, not, therefore, conducive to the creation of a cohesive society across the Dean. Virtual abandonment of the core areas would, however, have allowed regeneration of woodland and a softening of the topography of slag heaps. This cycle of intense exploitation of resources to the point of exhaustion, using contemporary methodologies and followed by virtual abandonment, was repeated in the post-Conquest period when the Forest landscape provided the raw materials to consolidate and sustain the Norman regime.

A more positive contribution from the Roman era was the reclamation of land from the Severn, primarily in its inner reaches. All the potential alluvial deposits can be seen to have begun development prior to the medieval period, facilitated by a favourable climate and a probable phase of natural deposition. Again the short-term benefit to pre-medieval societies was at the expense of later generations as the water table rose progressively over time and creating waterlogging and the need for maintenance regimes. Although there is no evidence for settlement other than on the solid geology this seems to be in close relationship to the river's edge. Topographical Anglo-Saxon names of the embayments suggest that they were being used in a natural state rather than receiving active management until the drainage earthworks of the later Anglo-Saxon period. This apparent intensification of land use may indicate a rising population. Place-names do reflect a potential change in emphasis from the topographical names of early settlement, adjacent to the Roman reclamations, to the eighth century 'tuns' such as Mortune and Elton associated with higher and apparently later reclamations. These settlements were able to occupy areas between or on the edge of areas of more concentrated settlement, such as those around Rodley.

In addition to a numerical increase, any new Mercian population would have brought its own culture, based on inland practice and agriculture rather than a

relationship with the river. Fishing, seen in the placename 'Garne' may have played a far more important role in early local economies than has so far been recognised - dating back to pre-Roman populations who recorded its local symbolism in the Lydney temple mosaics. The stability of the numbers of Tidenham's Severn fishing weirs from the tenth to the fourteenth centuries, in spite of rising post-Conquest populations, suggests that a saturation of favourable sites had already been achieved well before Domesday. Association of each weir with a plot of land, usually less than five acres and run by tenants, suggests that it provided a staple in the economies of the lower classes, and maintained the viability of a landscape of small- scale landholding. It contrasts with the monetary values placed on higher life forms, seen in contemporary local documents such as the 'Ordnance of the Dunsaete'. Animals indicated status with a horse valued more than a man and with other species ranging down to two pence for a goat which required little specialised care.

The Dunsaete appears to have been the name given to the local inhabitants by the Mercians after they gained control of Dean from the Welsh. Under the Welsh Dean had formerly been part of the kingdom of first the Ergyng and then as an annexation of Gwent. Welsh kings granted lands to the Welsh church which predominated after a probable initial survival of Roman Christianity. Known sites occupied good quality land near watercourses, which had had former association with Roman or pre-Roman usage. These religious sites survived an initial expansion of Mercia in the eighth century. Proximity of Welsh and English churches and dual symbolism suggest that there was a gradual assimilation of the new culture. Dean appears to have been a client kingdom, similar to the one established in the Welsh part of Ergyng (Archenfield), both now separated from Gwent. Such a political arrangement would explain the retention of a Welsh base to the local dialect.

A clear contemporary division between Dean and Gwent can be seen in the construction or adaptation of the major linear earthwork of Offa's Dyke, which extended along the majority of the western boundary of Dean. A further discrete section isolated the probable seat of the Welsh bishopric at Bicknor. New Welsh religious foundations respected this boundary and proliferated along the western edge of the Wye valley. Although Offa's Dyke had divided some earlier estates, such as Bicknor, cross-river fish weirs still appear to have been operational, though

accompanying land grants, such as Madgetts were appropriated by the new regime. Madgetts was one of the 'gate' settlements which appear to have been set up to monitor trade and passage of goods between the two cultures. Ringworks near crossing points suggest a capability for enforcement or defence. Within Dean itself arrangement of its settlements into 'hundreds' matched contemporary organisation in England to furnish military needs. Dean's hundreds were large and irregular and remained largely unchanged throughout the Anglo-Saxon period, suggesting that there was no great change in population other than at Tidenham and Awre. Reclamation and river trade may explain the economic prosperity seen around Awre at Domesday. Tidenham's expansion may be explained by a concentration of 'tuns' to emhasise Anglo-Saxon control in this extreme south of Mercian territory, in proximity to the political centre of Gwent. Distance from the cultural heartlands of Mercia may also explain later retention of the Welsh church in this area, in comparison with the church in northern Dean.

Drove roads from Wales crossed both the Wye and Severn via Tidenham, creating an economic link with the Welsh. A similar route passed north of the Dean and utilised the river crossing at Gloucester. There may have been a similar overland route from Monmouth to Awre. However, post-Conquest development around a river crossing and several wealthy Domesday estates, created Newnham as a major marketing centre for pastoral products. The centre was included in the northern drove circuit and would have eclipsed further development at Awre. Control of Dean by Mercia necessitated access from the north: the 'public way' from Hereford to Striguil, noted in the thirteenth century. It seemingly re-used the 'Dean road' as the central arterial route running north to south and would have enabled iron to feed the pre-Conquest iron industry which, at Domesday apparently centred around Hereford itself. A secure production area for weaponry to support the regime would seem necessary in an area which was continually affected by insurrections between warring Welsh petty kings. Attacks on English territory were progressively aided by external reinforcements; offering a reason for the construction of ringworks along riverine Dean - to resist waterborne attack. The Domesday retention by Hereford of Alvington, the only Dean vill to have a recorded iron industry, indicates the former politico/economic link. A redirection of the Domesday iron industry to a more easterly and politically secure location at Gloucester, to support the Norman regime,

may have been necessitated by a repeated and devastating series of contemporary attacks along the borders. These had necessitated pre-Conquest Mercian requests for help from Norman settlers after large areas of Herefordshire and western Dean had been laid waste, with an accompanying loss of Tidenham's manorial fishing industry in the Wye.

Political insecurity at Domesday necessitated a string of border castles which represented strong local government. Given the earlier requests for help and a contemporary need for reinvestment, the new regime is unlikely to have met with local opposition. Castle construction, however, may have begun a new erosion of Dean woodland through provisions of building materials. Areas which remained unproductive after attacks by the Welsh and a largely unpopulated central and western wooded area would also have offered the opportunity to create a 'Forest'. This symbol of Norman culture would not only have offered the opportunity for the Crown to bestow privileges on the local barons to maintain their loyalty, but also complement an existing regime of hunting. Pre-Conquest haies, or hunting areas, occurred along eastern Dean above Lydney. Location of these may support the hypothesis of cultural difference between the southern part of Dean, with its continuing Welsh associations, and the northern areas, influenced by Mercia. Bath Abbey's distant ownership of Tidenham, from the tenth century, would mitigate against use of the estates for anything other than resource provision. Nearby Gloucester Abbey, did, however, create haies in its lands in north-eastern Dean; there was a further clustering of hunting lands around Awre and this would seem to reflect a contemporary prosperity.

The new Forest co-existed, rather than competed, with these established hunting areas. Nor did it change the estovers and pasturage rights of the local inhabitants in the central woodlands, although there was clearly a more formal arrangement, with areas specifically designated to particular landholdings. Both woodland and agricultural areas provided for an outward flow of Dean's wealth to the castle estates and the alien churches which the local barons still supported. Local manorial churches, the basis of twelfth century parish organisation, would seem to have already been established prior to Domesday, though extant architecture dates from the thirteenth century. The apparently devastated pre-Conquest fishing industry on the Wye was re-instigated and invigorated by Domesday with new constructions,

all related to Welsh ownership at Striguil. The latter also controlled 'boats going to the wood' and indicates an established river-born trade network along the Wye.

Little population change can be identified in the Dean during this early period of consolidation, with only Lydney suggesting any internal settlement development. A new wave of defensive structures was constructed adjacent to the majority of the manorial centres during the Anarchy, mainly in the form of mottes. Capability to construct stone castles suggests active economies at Lydney and along the western borders, areas associated with iron resources. Crown ownership of Dean had been transferred to the Earl of Hereford to purchase his support for Matilda, but was confiscated on his death, an event which was commemorated in the founding of Flaxley Abbey.

The mid-twelfth century was a period which saw the establishment of a new wave of monastic houses to support the Norman regime. This began a second drain on the Dean's resources; to construct, furnish and maintain the new houses. Cistercian lands in Dean were again able to co-exist with, rather than replace, any existing religious houses though the landholding reflects a continuity in the re-use of established sites of significance, such as holy wells. There seems to have been an added political component - to provide buffer estates and designate boundaries at contentious sites. Economic factors may also be seen in the location of monastic property on areas which were undeveloped. Flaxley used 'Crown assarts', though there is no proof that the clearances had produced usable agricultural land by the time of its donation. Assarting was an expensive process and, given the apparent extensive use of timber for local construction, there may have been a need for investment to rejuvenate or improve felled areas to make them economically viable. Donation to religious houses would have provided the manpower and removed any onus on Crown resources. Other monastic sites, such as those for granges also appear to have utilised areas which, although offering economic potential would seem to have needed investment.

Flaxley's sites in the Littledean valley were old iron working areas with a small residual population. New technologies and re-use of the cinders of 'Synderford' provided the basis for a resurgence in the iron industry to complement the Crown

requirements for military hardware produced in Gloucester. Although evidence is limited it is likely that local landowners were also producing ore to supply the military requirements in the city. Other monasteries also used Dean ore. Llantony Priory had a twelfth century forge in Newnham before it acquired Alvington (with its mining rights) and initiated an export trade in ore, establishing a second forging site at St. Briavels. St.Briavels was also the location for a forge owned by Tintern Abbey, which maintained this, and its widespread mining rights, throughout the medieval period. The Abbey also appears to have had a contemporary export trade via the Severn through its grange at Woolaston. This industrial activity took place in tandem with agricultural expansion. Both Tintern and Flaxley Abbeys increased their agricultural estates on either side of the forest; there appears to have been a matching increase in secular agriculture along the Severn with an apparent resurgence of land reclamation. This peripheral growth of agricultural land would have been able to meet any additional requirement for local provisions in spite of the restrictions against inland expansion imposed by afforestation.

Although the early stages of a local iron industry were apparently in monastic hands, a more stable political situation, the construction of a castle and an increased need for armaments enabled the relocation of the Crown iron industry to St. Briavels in the thirteenth century. Its proximity to the main southern ore beds would have improved efficiency and lowered costs. The existence of at least two monastic forges suggests that, just as Tintern supported Striguil's garrison with food supplies, monasteries may have played a role in supporting the Crown armament industry, particularly as Tintern's forge appears to be located in 'quarrel field'. This shift in orientation of the industry to the south would have affected the northern producers. It may have provided a catalyst for a new nail making industry which was firmly established by the end of the thirteenth century, complemented by the growth of a major market in iron goods at Littledean. Proximity and development of Flaxley's granges suggests a monastic input into this facet of the industry. The vill grew accordingly, with miners and craftsmen forming the bulk of its population by the end of the century. Markets for the nail industry were directed outwards towards the midlands. The necessity for Crown licences for forging still ensured that resources could be channelled towards Crown needs if necessary.

The thirteenth century escalation in the iron industry around St. Briavels produced a third wave of woodland destruction - to supply charcoal for local smelting. Pit-props were also required for the underground mining which was now necessary after the Roman removal of surface deposits. The population of Domesday St. Briavels would have been swelled by inhabitants of the nearby vill of Wyegate, which had been depopulated by creation of the Forest. An expanding St. Briavels could have provided a resident workforce for both castle building (with its associated tasks such as stone quarrying and limeburning for mortar) and the iron industry. Concentration on such tasks may have ensured an initial symbiotic relationship with the agricultural settlements of the Severn for food supplies. As woodland continued to be removed in the area, the agricultural potential for local, self-sufficient settlement increased. The placing of charcoal pits over tree stumps would have helped facilitate the removal of the residues for land clearance; the activity was dual purpose providing fertile agricultural land as a bi-product of the requirements of the iron industry.

The need for access to mining areas and transportation of its products increased the number of tracks in the west. Clearances along their length to ensure safe passage provided opportunities for squatting. Although this remained illegal, and therefore could be controlled, many such dwellings were allowed to remain, their fines eventually commuted to rents. Locations near mines would be advantageous to the miners and led to the gradual formation of a vill at Coleford, and a smaller one at Clearwell. Both utilised former brown-field sites on which Roman slag had been deposited to great depths; construction did not, therefore, pose any loss of agricultural potential. Common fields were established around the perimeters of the vills. Newland was also established in the same vicinity, together with small hamlets such as Whitecliff and Highmeadow, and the close distribution of the settlement demonstrates the level of mining activity in the thirteen century. Land around Staunton and Bicknor was also assarted in the pursuit of charcoal, with some local iron production taking place on the estates - 'the Blaxe' along the lane from Staunton provided a medieval dump for its slag and removed its contemporary agricultural potential, in similar manner to Roman slag deposits at 'the Clowers'.

The chief product of St. Briavels was quarrels to furnish contemporary conflicts. These bolts were dispatched across Britain and abroad in completed form,

attached to arrows. Miners and foresters provided personnel for the wars. Additional support for their families was provided by their pastoral interests - miners have run sheep in the forest into modern times. This diversity prevented the specialisation necessary for the establishment of a sustained industrial base in Dean. The efforts of these generations of miners had lasting benefit for subsequent ones, with the institution of the status of 'free miner' allowing individual enterprise. Such enterprise again distanced the Crown from any investment - cost and risk in prospecting or developing mines was borne by the miner himself, who also had to find his own markets. This thirteenth century organisation initiated a way of life centred on individual effort which endured until the present day and effectively hindered the development of a cohesive mining industry in Dean.

Across the country as a whole the thirteenth century was one of a general rise in population. A degree of land shortage in Dean, which was met by the assarting in the west, can be seen in further alluvial reclamation in the east, including internal reclamation of common land at Walmore. Habitation also moved into these environments. Food supplies were augmented by a fishing industry which was dominated by monasteries in the Wye, especially Tintern Abbey. Tintern also owned most of the fisheries in the Severn up to Woolaston. In the Inner Severn a strong monastic presence was shared with Crown fisheries whose interests took priority; this limited the potential proliferation of weirs. Nevertheless fisheries covered most of the available shoreline. In the Middle Estuary extant examples of weirs around Stroat also suggest a growth in the industry in spite of the saturated capacity of fishing sites. Expansion was achieved by changing methodology, introducing installations of greater dimensions for proportionately larger catches.

Some fishing grounds in the Inner Estuary would have been gradually relocated as further deposition took place along the Severn shores. Reclamations, which appear to have been largely dominated by use as meadow in earlier periods, were now converted to arable; ridge and furrow can be identified, even on outer reclamations near the river. Increased corn production here increased the pressure on inland resources for pasturage and led to overgrazing of the forest. Designated areas, 'launds' were established to accommodate the needs of deer, agisted animals and timber production. Much of the woodland appears, from contemporary description, to

have been devastated by use of its timber trees for gifts and 'by the monks of Flaxley'. The latter describes the increasing industrialisation of this monastery and its iron interests which had dispersed to sites all across the forest and also in Somerset. By the end of the century its local timber consumption had been curtailed to a defined area of coppicing, in similar manner to that of Tintern in southern Dean. It demonstrates the existence of a policy to promote sustainability. Secular forges had been the first casualty of fuel shortages, their licences initially restricted to dead or small timber. There was a later dependence on fuel from outside areas such as Wales, sometimes resulting in joint cross-border enterprises.

To maintain a resource for timber, gifts and privileges, the designation of 'Forest' was gradually expanded outwards, to reach the surrounding rivers by the end of the century, with Newent marking its northern termination. It enabled re-establishment of hunting in these peripheral areas in the form of parks or chases as a new form of status at no cost to the Crown. The policy may have hoped to divert the focus of the activity away from the central, Crown hunting lands, to allay the virtual industry of poaching Crown deer by both monastic personnel and the upper classes. Parks were matched by the instigation of moated sites and fishponds as landscape features to indicate status, the latter specifically noted as monastic or Crown possessions. The paling necessitated by parks would have added a further drain on timber, but also symbolised an increasing compartmentalisation of the forest. It seems likely that a series of banks (walls) had been established in any gaps between park and coppice boundaries to form a virtual 'forest boundary' which marked the limit of assarting. Within this central area, although there was pollarding and shredding to accommodate increasing timber needs, the standard trees were allowed to remain. Although this had the short-term benefit of maintaining the hunting grounds, lack of woodland management for rejuvenation meant that at the end of the medieval period the woodland was dead, decayed and economically unviable. The area was unattractive to potential purchasers through the need for long-term investment, and retention by the Crown at this stage determined its future as a Royal Forest.

Although the 'assarting' and 'riddings' of the thirteenth century appears to have been unstructured and random, the area of woodland circumscribed by the 'walls' on the Forest map of 1608 does seem to have a cohesive shape. It suggests that

there was an underlying element of planning, with undesirable clearances re-established to maintain the integrity of the central woodlands. Some clearances were species-based to ensure survival of the preferred oak and beech landscape, and a large amount of Dean clearances were, in fact, of underwood, which was allowed to re-grow. Many assarts were instigated by monastic houses whose lands bordered the Domesday Forest. Their clearances initiated a gradual separation between the Royal Forest and the individual woodlands in the periphery of the extended Forest. This was particularly apparent in the north, where the place name ley denotes a fragmented woodland and increasing settlement during the Anglo-Saxon era. Given the post-Conquest iron industry there seems little likelihood of any subsequent cohesive woodland cover. A need for further timber and agricultural land during the thirteenth century was accommodated by removal of these more distant woods, again maintaining the integrity of the core.

As demands on local resources increased into the beginning of the fourteenth century, options for expansion were negligible. Estates such as Woolaston could still be improved through property exchange to produce larger, economically more productive units. The contemporary importance of land can be seen in the social unrest between Woolaston and Alvington over the potential new ground in the Severn, and the court case when land was lost, by erosion from Awre. Timing of the latter suggests that it may have been related to the climatic changes of this period. As the climate deteriorated falling yields would have meant food shortages. Expansion in the productivity of local fisheries was achieved in the Wye, by increasing the physical dimensions of the weirs, particularly in height (which interfered with shipping); in the Severn productivity was increased by re-investment into abandoned fisheries. Both activities suggest attempts to provide food to compensate for terrestrial losses. The need for increased catches may also have initiated further technological changes, with putcher rows, rather than individual putts firmly established by the next century; their multiple rows increased catches and improved efficiency in harvesting. Their earliest references link them to the Berkeley estate which dominated fishing along the eastern shores of the Severn. The estate appears to have had the financial capabilities to fund the capital investment in these large, complex structures which have remained as the preferred fishing method in the middle Severn until today. Although the open weave of today's putchers (baskets) is designed to catch mature salmon, medieval court

edicts regarding the catching of underdeveloped fish suggest that they may have been of closer weave and could have harvested a greater variety of species.

As the Black Death began to have an effect and population fell, the pressure on resources diminished with comparable loss in the value of land. It allowed speculative purchase by the Berkeley family into Dean including a last major assart into the forest, this time on its eastern edge, at Yorkley. The wool industry, which had been developing throughout the previous century, now took precedence over corn production. Valuations of meadow, relative to those of arable, ensured that the majority of Dean's alluvial reclamations were put down to grass by both monastic and secular landowners. Concentration on wool as a cash crop was matched, at least by Flaxley Abbey, in continued growth of its iron industry. These specialisations meant that less profitable parts of monastic estates, such as fishweirs and agricultural land were progressively leased out to individuals. It was accompanied by lack of investment in infrastructure; church buildings deteriorated through lowered levels of contributions. An increase in Crown income was also sought through rental income. Extra capacity for this was achieved through further assarts around St. Briavels and by encouragement for the setting up of Newent as a borough under the direction of its prior. Newnham was also developed further both for rental income and as a river-trading centre.

A depression of local production was matched by an increase of production elsewhere and the Severn and its ports became increasingly used for importation of goods from farther afield; even fish was imported from Ireland. Newnham became increasingly used as part of the port of Bristol and though exports of local timber, hides and iron remained, shipping carried cheap imports of iron from Spain, passing the Dean and travelling to the industries of the Midlands. The independent miners of the forest could not compete on price for iron for mass production and local industry remained rooted in its small goods of nails and horseshoes. Flaxley's industrial-scale production made it an economically attractive proposition for donation to Court favourites and resulted in the Abbey's early dissolution. Like Woolaston, the estate remained intact though in the hands of outside agents.

The map of 1608 illustrates a landscape which appears to have changed little from one described, through documents, as being laid out in the fourteenth century. Its easy identification with the modern map suggests little subsequent change until the developments of the late twentieth century. The landscape of the modern Forest is therefore the result of medieval requirements and achievements. Throughout the period an increasing pressure on resources produced amendments in organisation of the landscape to meet the most urgent contemporary demands, accompanied and modified by attempts at creating a viable and sustainable resource base through concentrating assarts, coppicing woodland and recycling slag. Although the central location and pre-eminent demands on resources by the Crown would have inhibited cohesive development across the whole area, this would also have been hindered by both geography and politics. Dean's distance from the major political and economic centres of eastern England, and a constant threat of involvement in insurrection by the warring factions in Wales, would not have attracted outside investment. Such a climate of insecurity promoted its continued use as a resource, removing any benefits from profits to outside agents. This, in turn, reinforced the lack of internal investment. As the Dean's industries were eclipsed by industrial developments elsewhere it was able to adequately sustain its local inhabitants by the diversity of its natural resources. It was this self-sufficiency which mitigated against change or subsequent involvement in external developments and led to the modern perception of isolation.

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Rudder,S.	1977	The Present State of Gloucestershire (1779) reprint. Sutton.
Rutter,	1829	Delineations of Somerset. NW Division London
Salisbury,C.R.	1991	'Primitive British fishweirs'.Waterfront Archaeology (Ed. G.L.Goode el al) London: 76-87
Salter,M.	1990	Parish Churches of the Forest of Dean Folly Publications
Sargeaunt,W.T.	1960	'The family of Sargeaunt, of Hart Barn, Longhope'. Transactions of the Bristol and Gloucester Archaeological Society Vol.78:110-119
Sawyer,P.	1968	Anglo-Saxon Charters, an Annotated List and Bibliography.London
Scott-Garrett,C.	1933-55	Ramblings of an Archaeologist handwritten GRO D 3921 11/41
	1938	'Chesters Roman villa, Gloucestershire'. Archaeologia Cambrensis Vol.XCIII: 93-125
	1956	'Romano-British sites at Chestnuts Hill and Pope'sHill, Forest of Dean'. Transactions of the Bristol and Gloucester Archaeological Society Vol. 75: 199-202
	1980	'Littledean camp'. Transactions of the Bristol and Gloucester Archaeological Society Vol.LXXVII: 48-60
Scrufer-Kolb,I.	2000	Roman Iron Production in the East Midlands and the Forest of Dean - a comparative study. University of Leicester. www.ies@leicester.ac.uk
Scull,C.	1999	'Social archaeology and the origins of the Anglo-Saxon kingdoms'. Anglo-Saxon Studies in Archaeology and History Vol.10 :17-23
Seebohm,F.	1896	The English Village Community
Shirley,E.P.	1905	English Deer Parks. Murray, London
Smith,A.H.	1965	The Place Names of Gloucestershire, Vol. 3. English Place Name Society
Smith,A.H.V.	1997	'Provenance of coals from Roman sites in England and Wales'.Britannia.Vol. 28: 319-20
Smith,J.	1902	Names and Surnames of all the Able and Sufficient Men in Body Fit for His Majesty's Service in the Wars, within the County of Gloucester, Compiled by John Smith, 1608) Sutton
Smith,L.P.	1979	A Survey of Salt Marshes in the Severn Estuary. Nature Conservancy Report No. 265.
Smith,K.E.S.	1995	'Iron-working in north -west Wales in the late fourteenth century'. Archaeology Journal Vol. 152 : 246-290
Stamper,P.	1983	'The medieval forest of Pamber, Hampshire'. Landscape History, Vol.5 : 41-53
Standing,I.	1993	Breckness Court Bristol University, unpublished
	1997	The Landscape of the Forest of Dean in the 17th Century: A Study Based on Contemporary Maps. (M.A. Dissertation. Bristol University)
	1998	'The Dean road' New Regard, Vol. 4 : 35-43
Stanford,S.C.	1980	Archaeology of the Welsh Marches. Collins

Steane,J.	1984	The Archaeology of Medieval England and Wales. Croom Helm
	1988	'The royal fishponds of medieval England'. Medieval Fish, Fisheries and Fishponds in England. (Ed. M. Aston) BAR 182. Oxford
Steane,J. & Foreman,M.	1988	'Medieval fishing tackle'. Medieval Fish, Fisheries and Fishponds in England. (Ed. Aston,M) BAR 182 Oxford
Stenton,F.M.	1971	Anglo Saxon England. Clarendon, Oxford
Stevenson,W.H.	1893	Calendar of the Records of the Corporation of Gloucester. Bellows.
Stokes,E. (Ed)	1914	Abstracts of Inquisitions Post Mortem for Gloucestershire. part VI.1359-1413. British Record Society, London.
Severn Trent Water	1976	Survey of the Alluvial Area Cone Pill to Lydney. Severn Trent Water
Sweeney,D. (Ed.)	1995	Agriculture in the Middle Ages: Technology, Practice and Representation.. University of Pennsylvania
Taylor,B.	1998	'Archaeology in the Severn estuary,1998' in Archaeology in the Severn Estuary. Vol.9 Severn Estuary Levels Research Committee:1.
Taylor,C.	1972	Domesday Survey of Gloucestershire Jefferies & Son
	1974	Fieldwork in Medieval Archaeology. Batsford
	1979	Roads and Tracks of Britain. London,Dent.: 84-152
	1983	Village and Farmstead: A History of Rural Settlement in England. London, George Philips.
Taylor,E.	1993	'Penyard,Eccleswall and Linton', Hereford Archaeological News. Woolhope Club: 20-24.
	1997	Kings Caple in Archenfield. Logacton Pres
Thorn,F.R.	1988	Hundreds and Wapentakes. in Gloucestershire Domesday: Folios and Maps. Vol. 1: 40-49 (Ed.Erskine,R.W.H.), Editions Electo, London.
Townley,E.L.	1997	The Monastic Landscape of the Forest of Dean.. Unpublished M.A. thesis. Bristol University
	1999	'Fieldwork on the Severn shore: Stroat to Woolaston, Gloucestershire' Archaeology of the Severn Estuary Vol.9. Severn Estuary Levels Research Committee: 80-83
Townley,S.	u/p	'From multiple estate to nucleated villages: Bampton, (Oxon) from the 10th century to the 13th'. paper presented to conference, Victoria County History and the Study of Rural Change 1999
Townley,W.	1974	Industrial Sites in the Vale of Castiard. Glos. Community Council
Trotter,A.	1936	The Dean Road. Bellows
Tylecote,R.	1976	A History of Metallurgy. London
Vanes,J.	1974	The Ledger of John Smythe 1538-1550. RCHM. JP19 HMSO London
Walker,B.	1986	'Boughspring, a moderately sophisticated Roman farmhouse'. Glevensis no 20: 37-8

Walker,D.	1980	'The estates of St.Augustine's Abbey, Bristol' Historic Churches and Church Life in Bristol (Ed. J. Bettey) Bristol and Gloucester Archaeological Society: 11-28
Walker,D. (ed.)	1998	Cartulary of St. Augustine's, Bristol. Bristol and Gloucester Archaeological Society
Walters,B.& M.	1983	'Excavations of field strip, lynchet and holloway at Littledean'. New Regard. Vol. 3 : 55-59
	1988	'An historical study of Bicknor, Forest of Dean: first interim report. Glevensis
Walters,B.	1988	'Excavations at Glendower St. School, Monmouth' Dean Archaeology, Dean Archaeology Group Vol.1: 3-28
	1991	'Rescue excavations on the Roman occupation site at Legg House, Blakeney'. Dean Archaeology. Dean Archaeology Group.Vol. 3: 40-44
	1992	The Archaeology and History of Ancient Dean and the Wye Valley. Thornhill The Forest of Dean Iron Industry, 1st to 4th Centuries AD (unpublished M.Phil Thesis. OU)
	1993	Excavations on the Roman Occupation Site at Legg House, Blakeney. Dean Arch. 5:4-12
	1999	The Forest of Dean Iron Industries . Vols. i and ii. Dean Archaeology Group
Walters,R.C.	1928	The Ancient Wells, Springs and Holy Wells of Gloucestershire. St. Stephens Press, Bristol: 136-140
Waters,B.	1955	Severn Tide. Dent
Waters,I.	1977	Beachley between the Wye and the Severn. Army Apprentices College, Chepstow
	1980	Chepstow Road Bridges. Moss Rose Press
Watkins, B.	1985	The Story of Flaxley Abbey.
Watson,A.	1987	The Medieval Libraries of Great Britain. Royal Historical Society, London
Weaver,F.	1983	Somerset Medieval Wills 1383-1500 Sutton
Webb,A.	1988	John Malemort - King's Quarreler pt1&2 J.Soc Arch-Antiquaries.
	1992	'St. Briavels, the king's great arsenal'. Dean Archaeology no.5. Dean Archaeology Group.
Wildgoose,P.	1988	Surface Mining of Iron Ore at Wigpool, Forest of Dean. in The New Regard. Vol.4: 4-11
	1993	The Forest of Dean as a Major Centre of the European Iron Industry from Roman to Medieval Times'. Unpublished Bristol University M.Litt. Thesis
Wilkinson,D. & McWhirr,A.	1998	Cirencester Anglo-Saxon Church and Medieval Abbey. Cotswold Archaeological Trust
Williams,A.	1988	Introduction to Gloucestershire Domesday. Gloucestershire Domesday: Folios and Maps.Vol. 1 (Ed.Erskine,R.W.H.), Editions Electo, London. : 40-49

Williams,D.H.	1976	White Monks in Gwent and the Border. Griffin Press (Pontypool)
	1983	The Welsh Cistercians, Vols 1 & 2. Cyhoeddiadau Sistersiaidd (Caldey Island)
	1986	An Atlas of Cistercian Lands in Wales and the Borders University of Wales Press
	1993	'A seal of the Knights Hospitaller from St.Briavels'. Transactions of the Bristol and Gloucester Archaeological Society Vol.110 : 99-100
Williams,H.	1997	'Ancient landscapes and the dead: the reuse of prehistoric and Roman monuments as early Anglo-Saxon burial sites'. Medieval Archaeology. Vol..41: 1-33
Williams,S.	1996	Taynton Parva, Deserted Medieval Village. Dean Archaeology Group.
Williamson,T.	1997	'Fish, fur and feather: man and nature in the post-medieval landscape'. in Making English Landscapes (Eds. K.Barker and T.Darvill) Oxbow.
Winters,A.	1700	Collection of Notes Relating to Gloucestershire. Gloucestershire Record Office. uncatalogued.
Witney,K.P.	1976	The Jutish Forest: A Study of the Weald of Kent from 450 to 1380 A.D. Athlone. London
Wood,J.	1922	The Island Chapel of St. Twrog in The Severn and the Manors of Tintern and Trellech. Mulloch & Son Notes. Newport Record Office
Woodward,A. & Leach,P.	1993	The Uley Shrines: Excavation of a Ritual Complex on West Hill, Uley, Gloucestershire, 1977-79. London, English Heritage.
Wyrall,G.	1887	'Observations of the iron cinders found in the Forest of Dean and its neighbourhood'. Transactions of the Bristol and Gloucester Archaeological Society. Vol.2: 216-34
Yarranton,A.	1677	Improvement of England by Sea and Land
Young,C.R.	1979	The Royal Forests of Medieval England. Leicester University Press
Zarnecki,G.	1953	'The Newent funerary tablet'. Transactions of the Bristol and Gloucester Archaeological Society Vol.72 : 49-55

Maps and Microfiches

Gloucester Record Office

GRO Microfiche:	12th/15th c.	Newent Cartulary (British Museum) micro 632
Abel Winters	1700	Collection of Notes relating to Gloucestershire GRO uncatalogued

Public Record Office

undated	Elizabethan Map of the River Severn
1608	Forest of Dean
1778	Collection of maps relating to the Forest of Dean

ABBREVIATIONS

A.P.	Aerial Photographs
B.G.A.S.	Bristol and Gloucester Archaeological Society
Ch.	Chapter
CL.ROLLS	Calendar of Close Rolls
C.R.A.A.G.S.	Committee for Rescue Archaeology in Avon, Gloucestershire and Somerset.
D.A.	Dean Archaeology (journal)
D.A.G.	Dean Archaeology Group
D.M.V.	Deserted Medieval Village
Ed.	Edited by
E.P.N.S.	English Place Name Society
G.R.O.	Gloucestershire Records Office
I.P.M.	Inquisitions Post Mortem
H.R.O.	Herefordshire Record Office
H.M.S.O.	Her Majesty's Stationary Office
LIB.ROLLS	Liberate Rolls
L.LLAN.	Liber Llandavensis
M.A.	Medieval Archaeology (journal)
M.H.W.S.T.	Mean High Water Spring Tide
M.R.O.	Monmouthshire Records Office
N.A.M.H.O.	National Association of Mining History Organisations
N.G.R	National Grid Reference
N.M.R.	National Monument Record
n.p.	No pagination
O.D.	Ordnance Datum (0m mean sea level)
O.S.	Ordnance Survey
PAT.ROLLS	Patent Rolls
Pers.comm..	Personal Communication
P.P.G.16	Planning Policy Guidelines, no.16: re. Mandatory archaeological considerations prior to construction work
P.R.O.	Public Record Office
R.C.H.M.E.	Royal Commission on the Historical Monuments of England
S.M.R.	Site and Monuments Record
S.R.O.	Somerset Records Office (Taunton)
T.B.G.A.S.	Transactions, Bristol and Gloucester Archaeology Society
W.H.R.O.	Worcestershire and Herefordshire Record Office
W.N.F.C.	Woolhope Naturalists Field Club (Hereford)
V.C.H.	Victoria County History

GLOSSARY

ACRE	Statute acre = 16.5 feet to the pole. Woodland acreage differed from statute measure and varied from forest to forest. Assarts were surveyed at statute measure.
AGIST	To permit domestic animals in the woodland, usually involving payment to the king.
ASSART	To clear land to bring into cultivation
BAILIWICK	An area under the responsibility of a bailiff - the ten in the Forest of Dean were under the foresters of fee.
BOTE	A legal right
BURH	A fortified place, walled town or a town possessing municipal organisation
BUTT	Cask for wine from Spain: 126 gallons
CARUCATE	A unit of land varying between 80-120 acres
CHASE	Unenclosed tract of land for rearing and hunting of animals owned by the nobility
CINDERS	The Medieval word for bloomery slag. also SYNDERS,
COMMON	Unenclosed land belonging to a community with shared rights
COPPICING	Management of timber stock by cutting off branches near the ground and allowing regrowth for harvesting cycles.
CRANNOCK	bundle of corn
DEMESNE	Land owned by king or lord for personal use or benefit.
DICKER	Ten hides of leather
ELEVATION	The height of a field in relation to the Mean High Water Level of the River Severn
ESTOVER	Legal rights to 'necessaries' from forest resources
EYRE	A judges court or session at an itinerant court
FOREST	An unenclosed area where the king's beasts were legally protected, and in 'The Forest' subject to his special laws.
GASCON	Wine from Bordeaux
GRANGE	A monastic farm
GROUND	Grassland not prone to flooding, distinguished in the Vale of Gloucester 1789 by ridge and furrow. Few had common rights.
HAIE/HAY	A hedge or enclosure in which deer may be caught or kept - a fore-runner of the park
HAM	Grassland prone to flooding: either pasture or meadow. Often common land.
HIDE	Unit of land measurement, originally that capable of sustaining a family and therefore variable depending on available resources. Otherwise c. 120 acres
HOLLOWAY	A track worn down by repeated use, often bordered by hedges
HUNDRED	Political unit within a shire, governed by local representatives and officials at weekly meeting at a 'moot' place.
INCLOSURE	Enclosing land to create fields for use by individuals from common land
IPM	Inquisition Post Mortem. Documents detailing an individual's possessions, complied on his death
KNEES	Shaped timbers which link components of a boat in different planes.

LAND (LAUND)	Areas within a forest for grazing of commonable animals on payment by their owners.
LEAGUE	Measure of length, usually of woodland, c. 1 ½ miles
MARK	A mark was worth 13s 4d
MEADOW	Grassland prone to flooding, cut for hay and often grazed by cattle and horses.
METES	Bounds or perambulation of a forest.
MOOT	Designated place such as a barrow or tree where Hundred business discussed.
NEAP	Tides which progressively decrease in height during the second half of the monthly tidal cycle.
NOBLE	6shillings and 8pence
PANNAGE	Grazing rights in the forest
PASSAGE	A ferry or crossing place over a river
PIECE	Four Quarterons of fruit
PILL	Local name for tidal streams entering the river.
PIPE	Measurement of Iron equivalent to 0.5 ton, or 126 gallons wine
POLLARDING	Similar to coppicing, but branches removed at head height to prevent damage by grazing animals
PONTAGE	River crossing tolls
POUND	£.s.d. A pound (£) was made up of twenty shillings(s), each divided into twelve pence (d), i.e 240d = £1.
PURLIEU	Disafforested land with foresters' jurisdiction over its woodland
PURPRESTURE	An encroachment, usually by illegal enclosure.
PUTTS,	A three part fish trap
PUTCHES	Tapering baskets, set into weirs to catch fish
REGARD	Inspection of the forest by knights known as Regarders.
RIDDING	A cleared areas of forest, also known as a TRENCH when long and narrow.
RIDGE AND FURROW	Alternating higher ground and troughs in an S pattern fields, caused by the action of ploughs
SCOWLES	Old iron workings
SLAD(E)	A valley
TALLAGE	Taxes
TITHING	An area subject to a larger manor
THEGN	One of King's ministers or military companions, later a person holding land by special grant from the King
TON/TUN	A Saxon settlement, originally a single site
TROW	Flat bottomed boat for river transportation.
UNCIA	Measurement of land equivalent to 500 acres (Davies, 1987:33)
WASTE	Uncultivated land, or destruction of woodland.
WEIR	Arrangement of stakes or stones to trap fish
WENTLOOGE	A layer of grey silt representing a marine indundation of the Severn estuary (after a Welsh place-name).

PLATES

Pl.1 Remains of a clapper bridge at Awre.

The clapper bridge crossed a redundant course of the Black Brook entering Brims Pill. Hall Farm can be seen in the background, looking north and a Saxon mill lay to its west, utilising the new course of the stream.

Pl. 2. The Moat at Little Box Farm, looking North.

Pl. 3 Flooding at East Wildmoor, from Boxbush Farm.

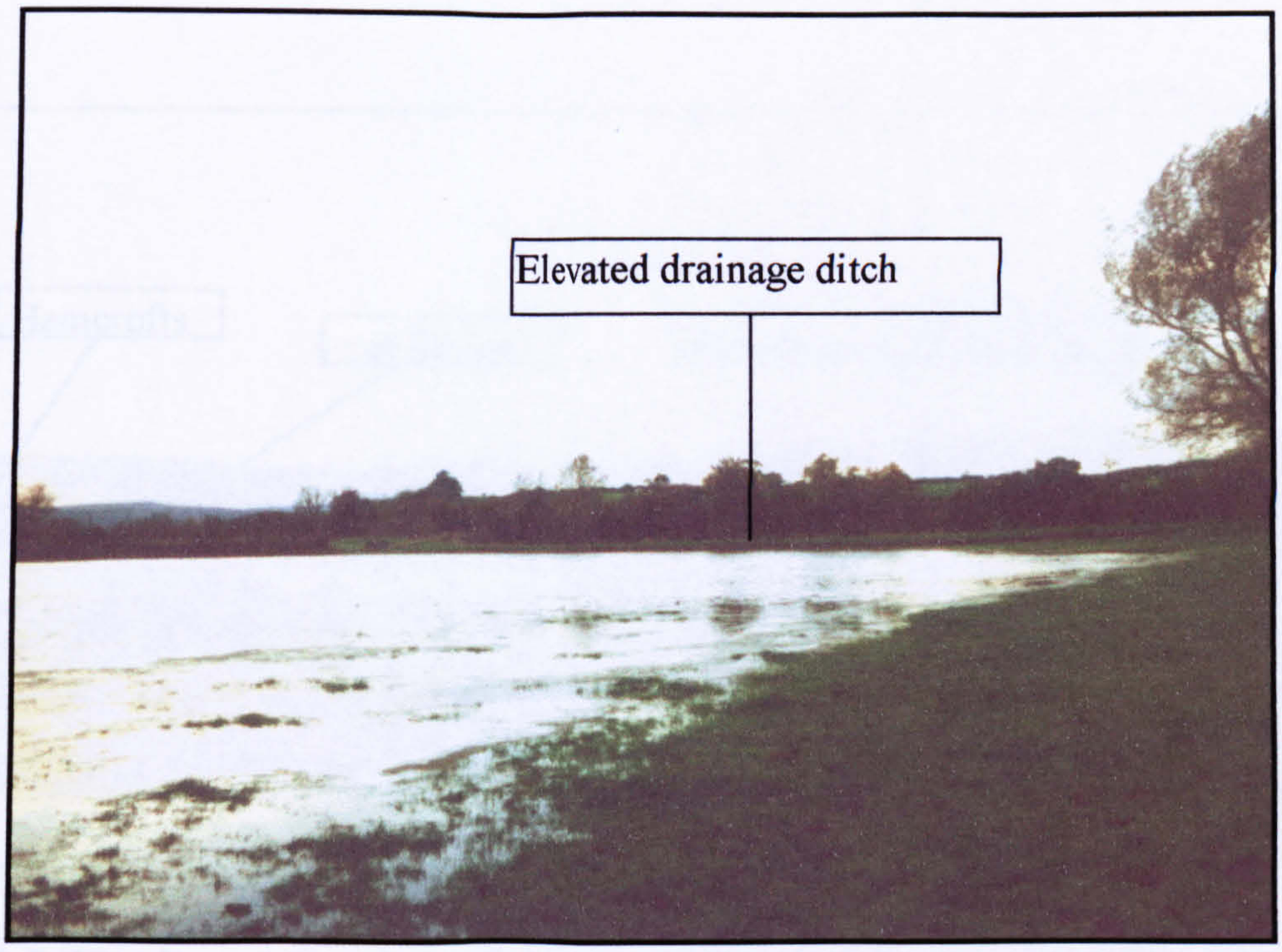
Pl. 4 Hayden area, 1785, showing the redundant sea-bank.

(Copyright, GRO).

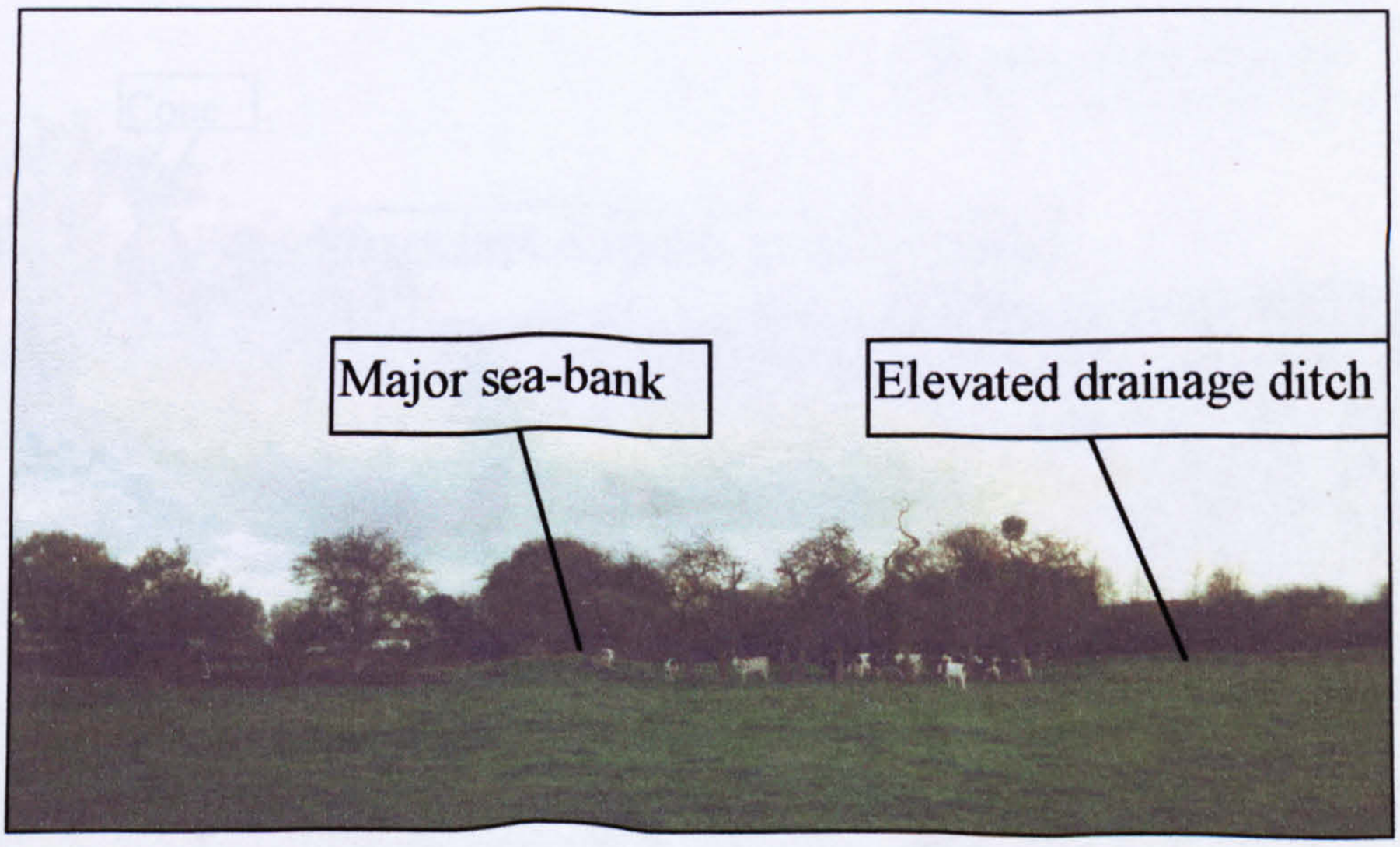
Pl. 5. Westbury flooding (Nov. 2000) looking south, suggesting the lowest-lying areas of land.

The 16th century roadway could represent the earliest sea-bank, linking the solid geology of Cleeve Hill with the 'mainland' below Stantway. Such an earthwork would have prevented indirect flooding of Wildmoor to the east (left). Westbury lies on a spur of land to the west (right). The stream which flows from the valley behind (inland) of Westbury, into a former pill near Garne Mill, would have offered a natural demarcation along which to create a further sea-bank (now degraded); there appears to be a difference in depth of floodwater either side of this stream, with the deepest to the east. This eastern sector can be identified in the photograph as the brightest area of water.

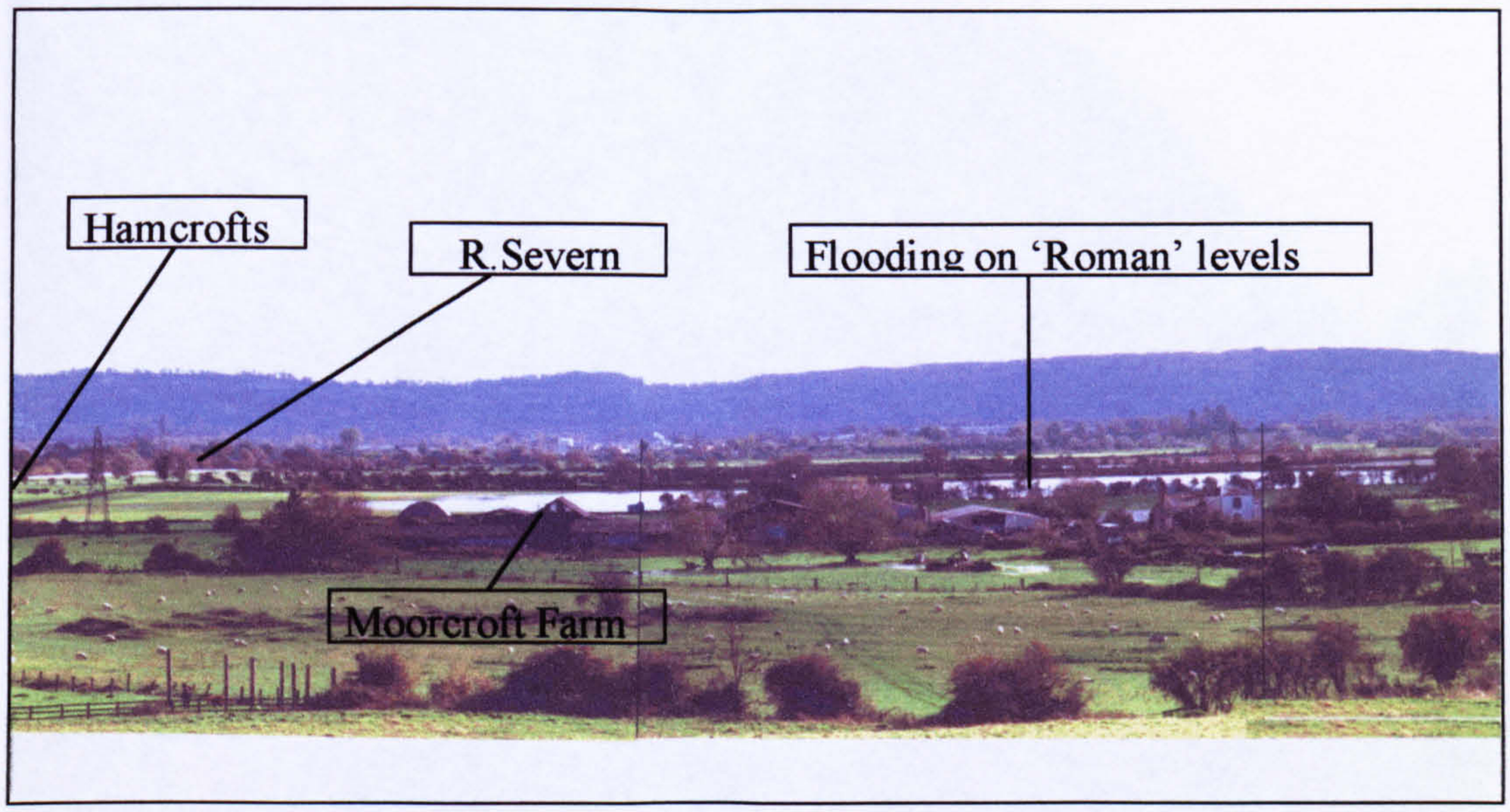
The evidence suggests that the impetus for such projects came from the settlements on the end of the peninsula and that Westbury had a later development.



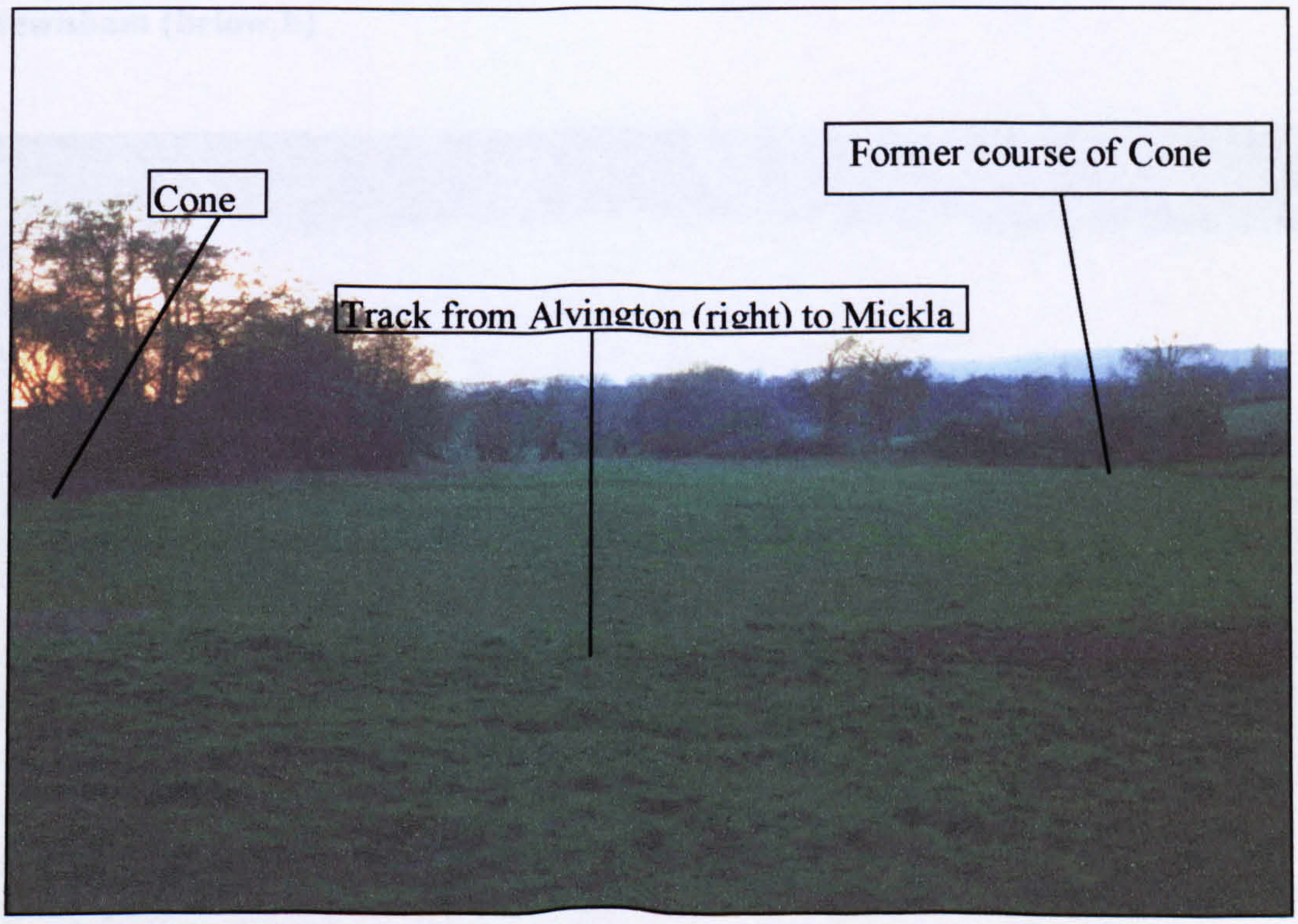
Pl. 6 Earliest sea-bank in the Walmore series (looking north), with the raised drainage channel in the background.



Pl. 7 The major sea-bank at Walmore (looking west).



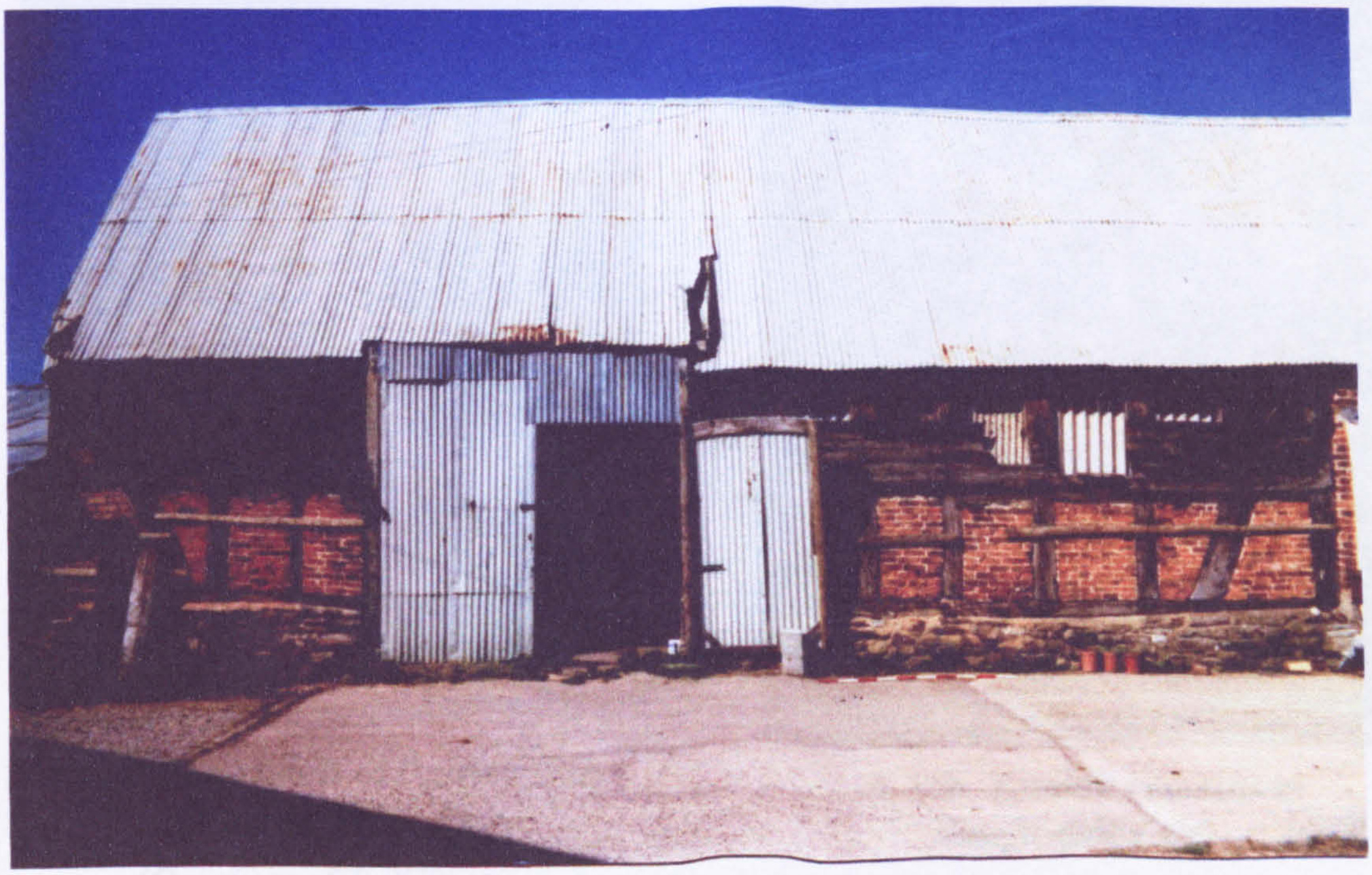
Pl. 8 Flooding at Cornham (November 2000) showing areas of deepest field elevation.



Pl. 9 Track across the alluvium at Mickla Bridge

a

Pl. 10 Part of the great barn at Dymock Grange (above,a) in comparison with the smaller cruck barn at Flaxley Abbey's local holding at Hyde Farm, Newnham (below,b)



b

Pl.11 Earthworks at Naas looking east.

***Pl.12a Cist made of Roman tiles,* Boughspring Villa.**

(Courtesy of T. Wilcox)

Pl. 12b Human remains in *Boughspring cist.*

(Courtesy of T. Wilcox)

Pl.13 The overlapping earth banks spanning the valley at Stowe camp.

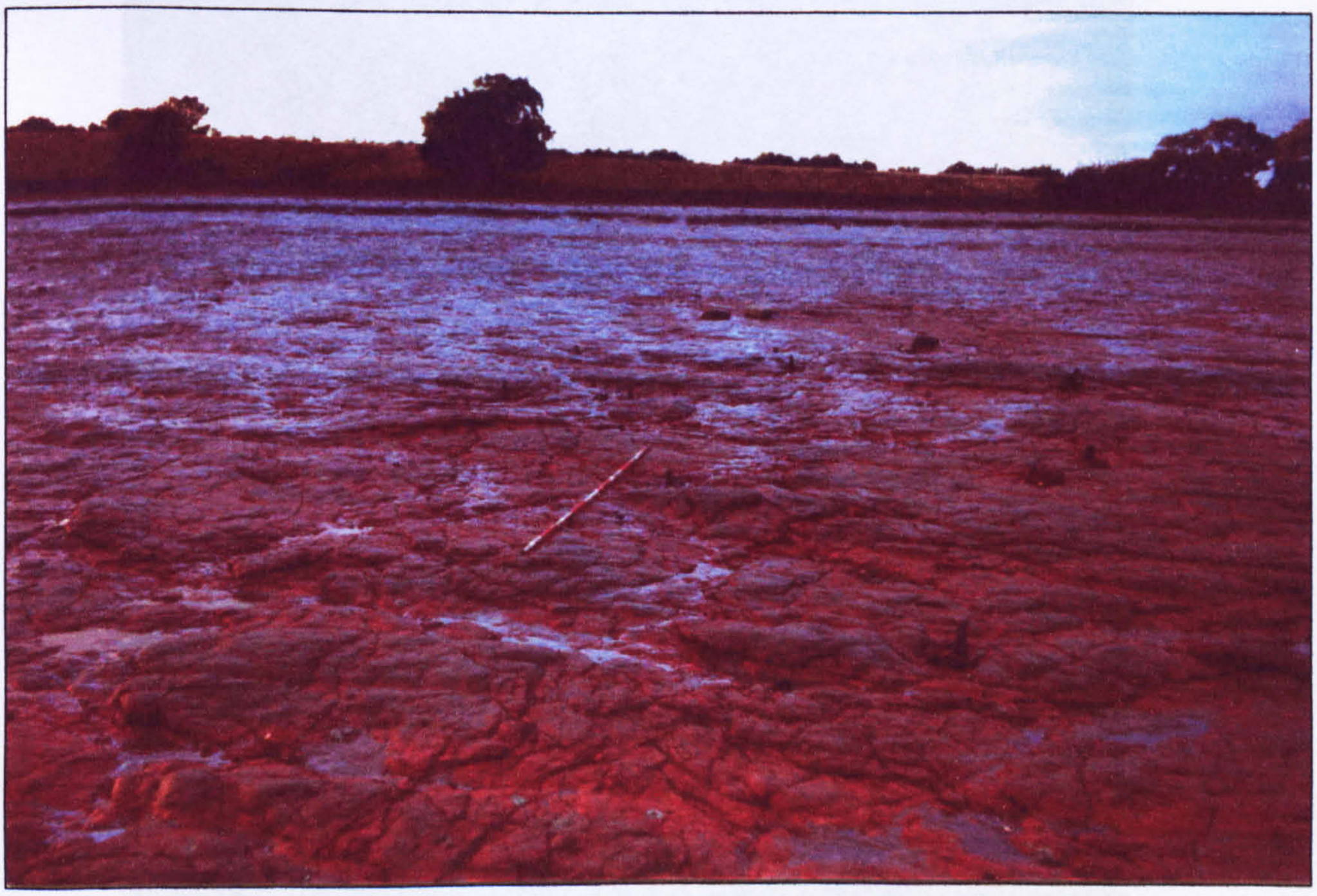
Pl.14 Remains of 'castle' wall at Penyard.

Pl.15 Moated site at Philpott's Court Farm, Tidenham

Pl.16 Moated site at Box Farm, Awre

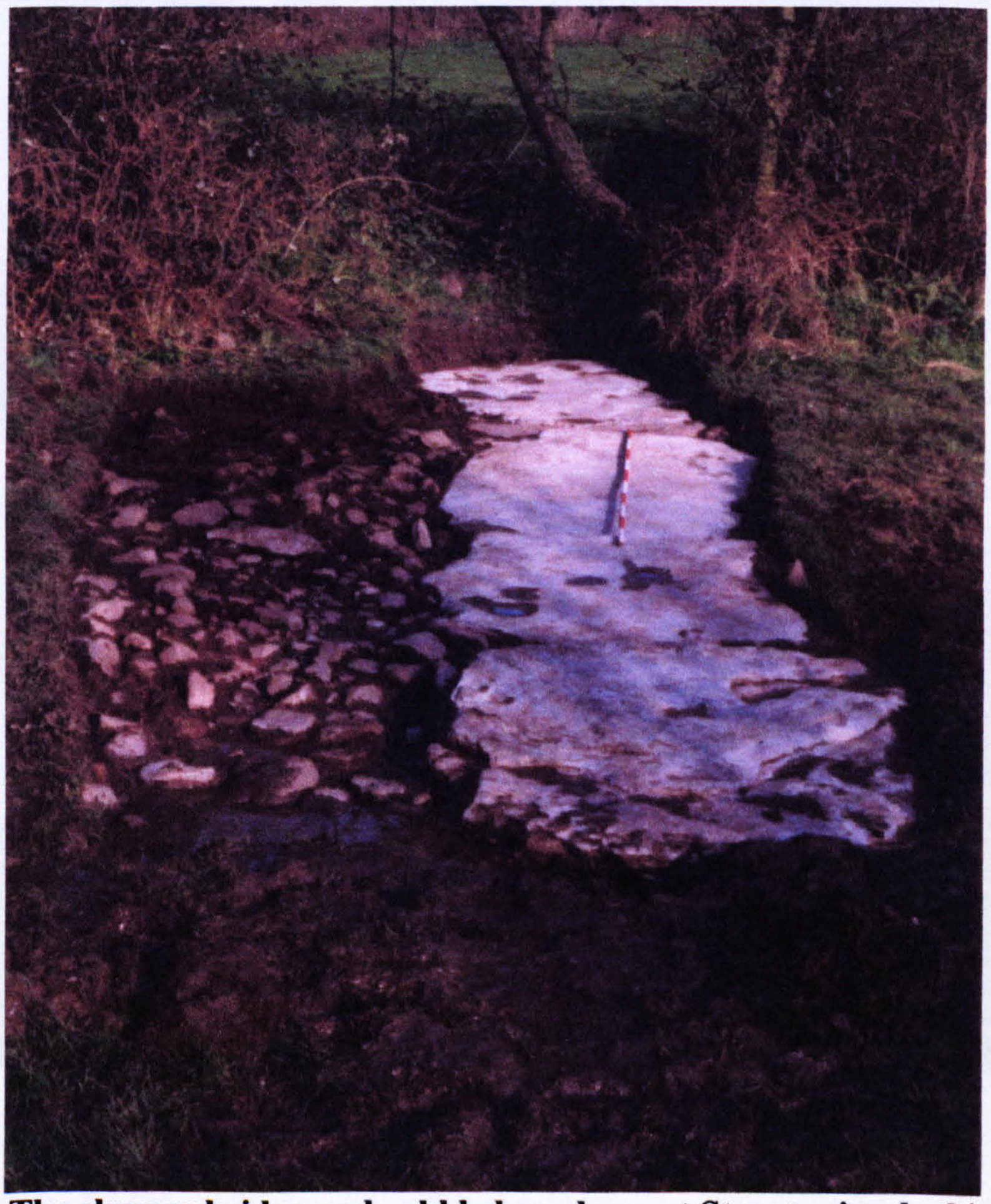
Pl.17 Moat at Breckness Court, Pingry Lane, Coleford

Pl.18 Location of the 'V' shaped trap at Waldings Pill, looking upriver at low tide, November 1998.



Pl.19 Indications of a multiple 'V'shaped weir between Stroat and Woolaston: Post holes and truncated timbers are set into the bedrock near the low-tide mark

Pl.20 Stone foundations of Plumweir, downriver from Tintern Abbey.



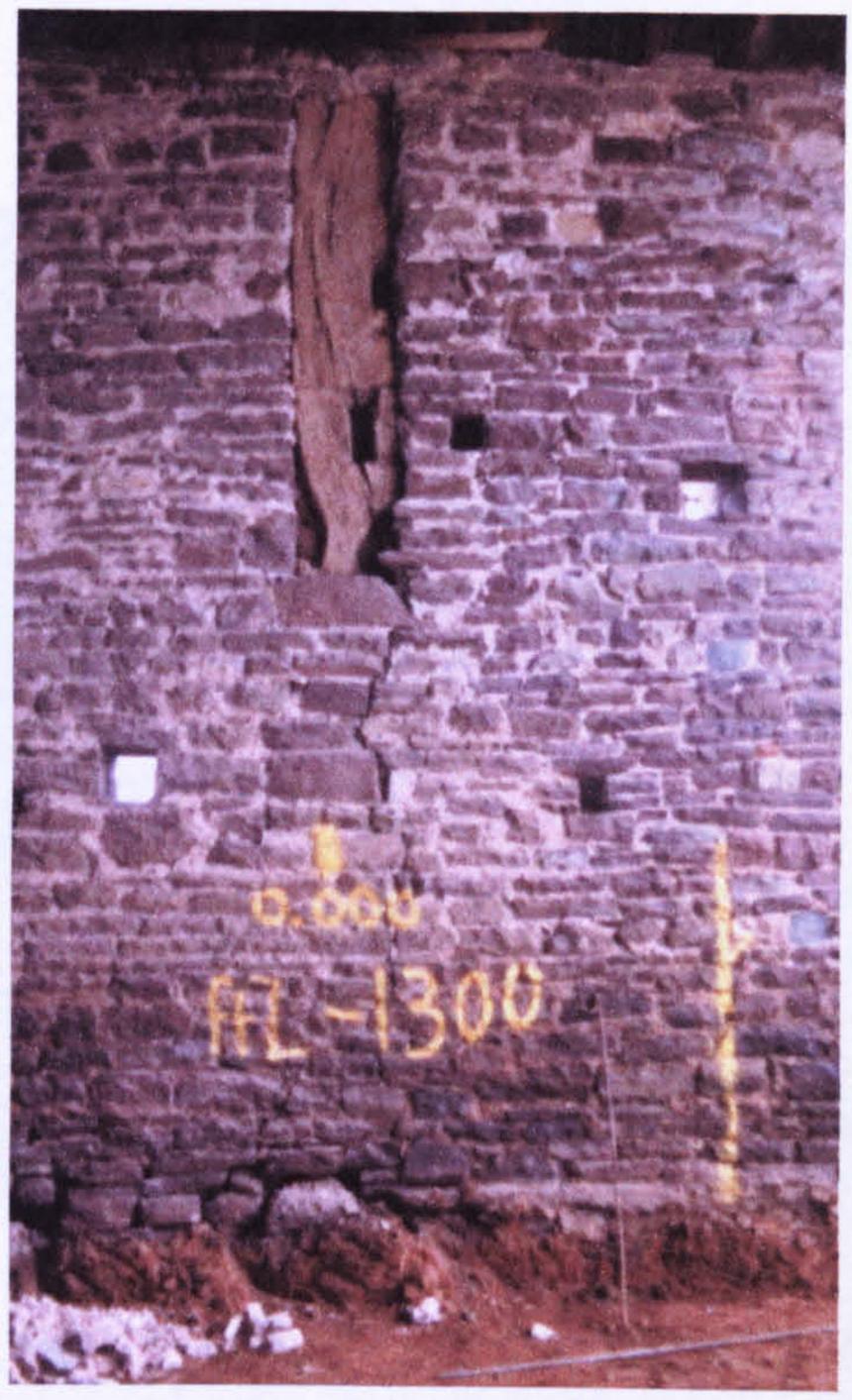
Pl. 21 The clapper bridge and cobbled roadway at Stroat: view looking east

Pl.22a Woolaston Grange fishponds from the south-west

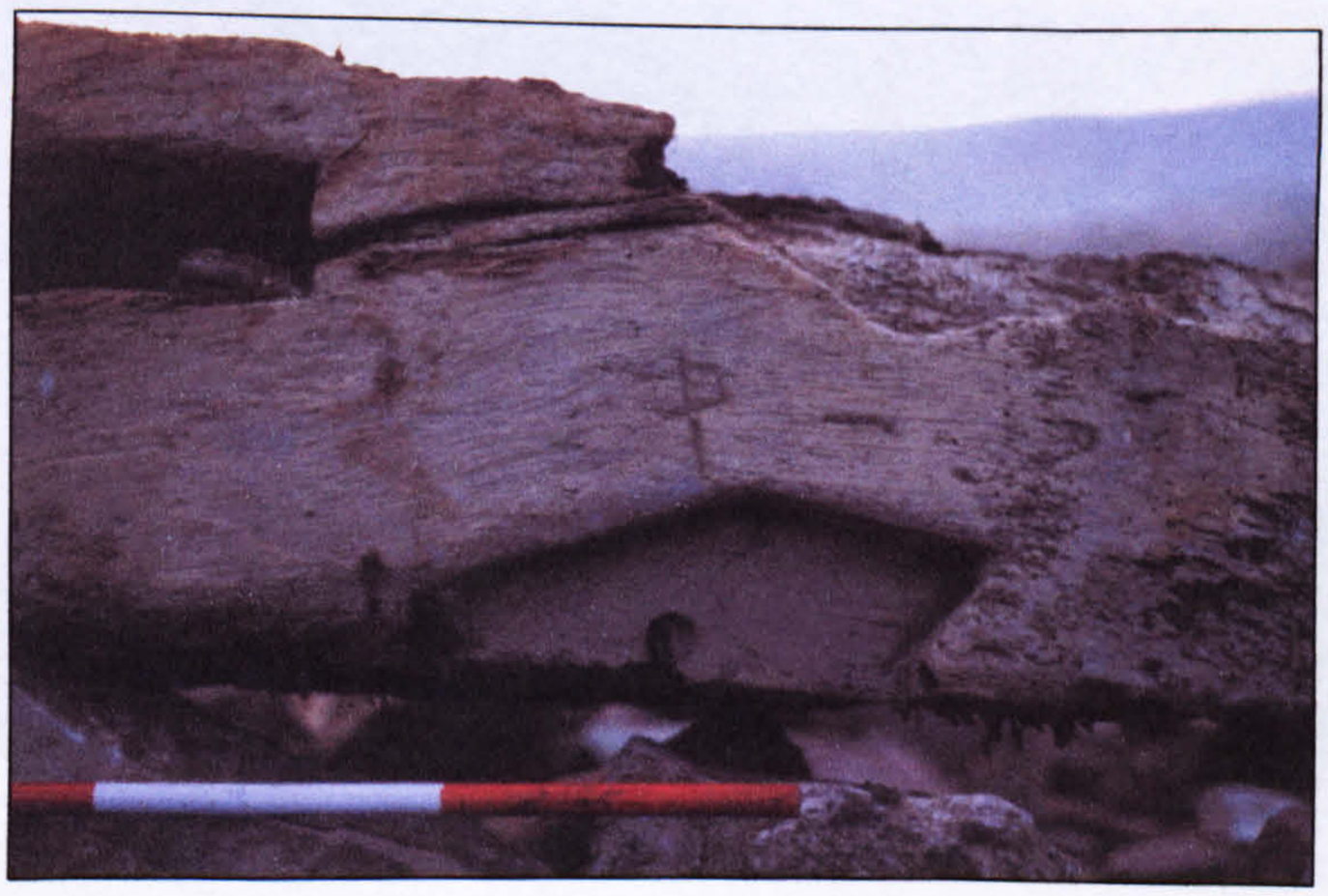
Pl. 22b Woolaston Grange fishponds from the north-west

Pl. 23. Remains of the hermitage on the island of St, Twrog's at the confluence of Wye and Severn, taken at low tide looking south.

Pl. 24 Medieval worked stone recovered from the walls of Woolaston Barn

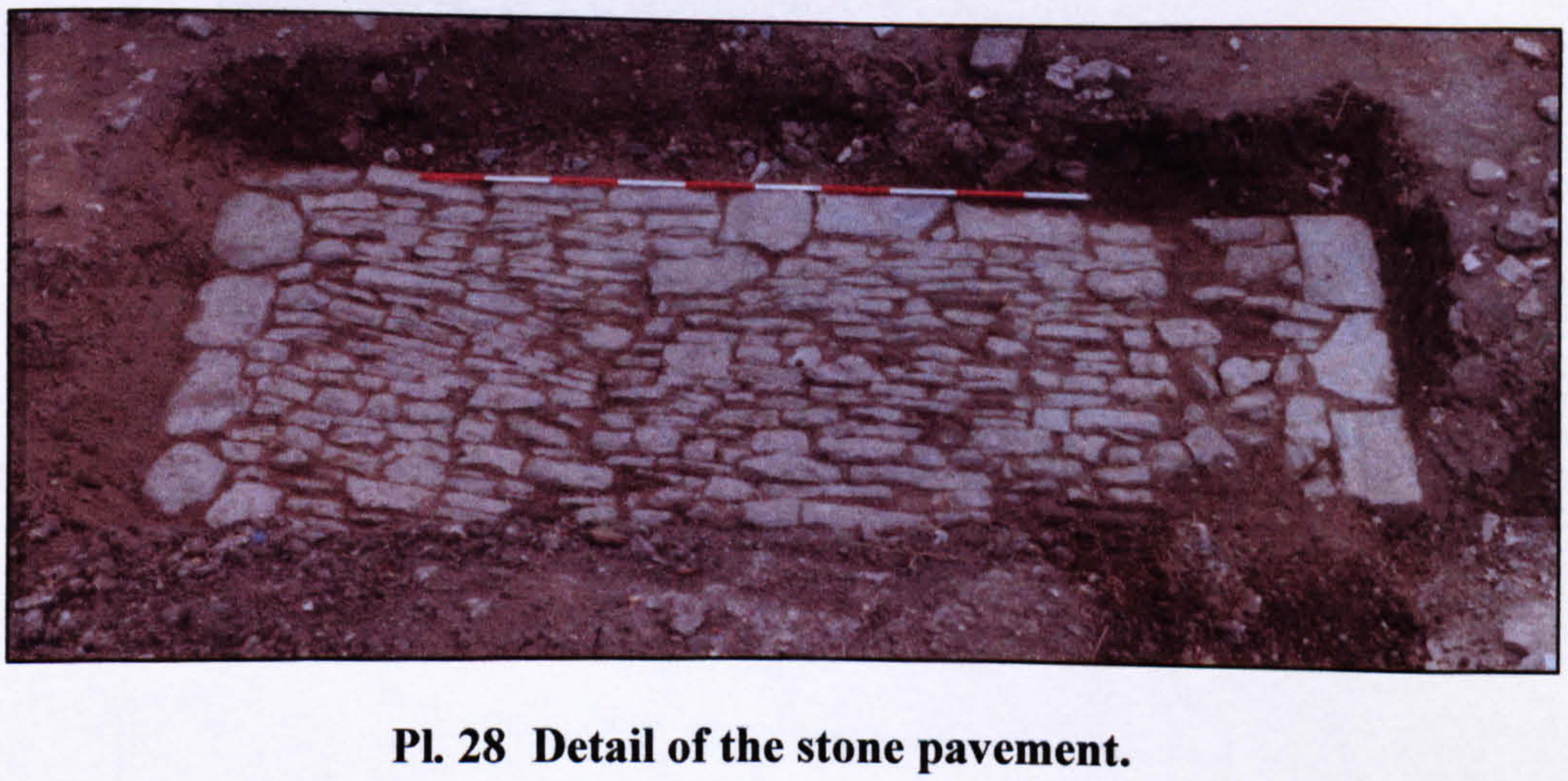


Pl. 25 Redundant scorched timbers embedded in the Barn wall.



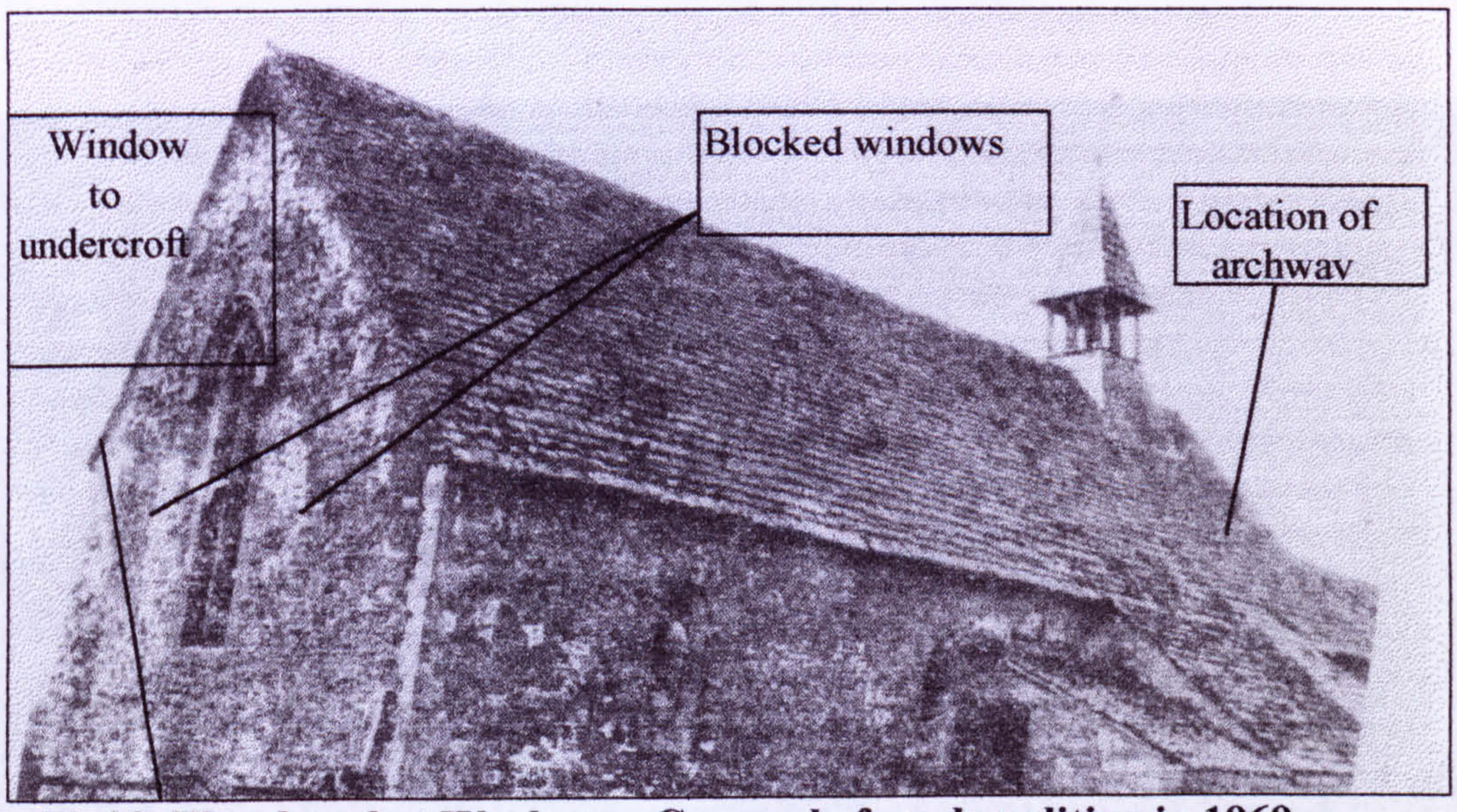
Pl.26 Detail of redundant barn timber: Notched and pegged lap joint with carpenter's mark above.

Pl.27 Location of the stone pavement, to the north of Woolaston Barn



Pl. 28 Detail of the stone pavement.

Pl. 29 Excavation of mill site at Woolaston Grange looking east .
Earthworks of the later, extended, leat leading to the post-medieval mill can be seen in the background, curving into the distance



Pl. 30 The chapel at Woolaston Grange before demolition in 1969

(courtesy of Rev. Dr. D.H Williams)

Pl.31 Worked stone from the pond infill at Littledean Grange

Pl.32 Excavation at Stowe Grange, mid 20th century.

The undocumented excavation was photographed by F. Harris (The Harris Collection, Gloucester County Library). courtesy of the Harris Family

APPENDIX: CHARTERS

1: THE ORDNANCE CONCERNING THE DUNSAETE c.AD 926 (after Noble, 1983:105-109)

Agreement between the English Witan and the counsellors of the Welsh people and the Dunsaete:

1. Anyone tracking stolen cattle must hand over the tracking at the river or show his right to track.
2. The landowner must take up the search within nine days or pay compensation or pledge 150% of the cattle's value which should be redeemed by the right compensation within nine days.
3. A wrongful tracking must be settled at the bank by 6 unselected men of good repute (including the owner) who swears a claim to folk right against the land into which his cattle have gone.
4. The settlement should be settled by both parties within nine days.
5. There is no other way of clearing oneself of a charge except by ordeal, unless the opponent will allow it.
6. A pledge can be seized from the other bank if that is the only way to get justice.
7. If one man's pledge is seized on another man's account, the one on whose account it was taken should get it back or give the man who lost the cattle compensation from his own possessions.
8. Then he will have to do right who would not do it before.
9. Six Welsh and six English men will decide justice.
10. They will forfeit all they possess for a wrong judgement unless they can prove they knew no better.
11. If either English or Welsh fails to clear himself of theft he must pay the required compensation only.
12. If a Welshman kills an Englishman he must pay only half the man-price whether he is a thane of a churl. The same applies to killing a Welshman.
13. Neither is to cross over into the other's land without an escort from that land taking him from the river-bank.
14. If a man of that land connive any crime he will be liable to penalty unless he can clear himself of having witnessed it.
15. The same to anyone who knows or is involved when a foreigner harms a native - he must clear himself of being an accessory according to the value of the property and the accuser must begin his suit with a preliminary oath.
16. If the defence fails the fine is doubled and a penalty paid to the lord.
17. Values are: horse 30s, mare 20s, winter steal (1 year old stallion) 20s, wild weorf (wild cattle?) 12s, ox 30d, sow, 24d, pig 8d, man £1, sheep 1s, goat2d.
18. Other things not seen may be valued on oath and paid for accordingly.
19. If anything is seized and the possessor wishes to vouch as a warrantor someone over the river let him give security or pledge so that the case may be concluded.
20. Anyone claiming something as being stolen from him make an oath, as one of six men

21. Let the one claiming right to it give his oath alone, claiming it by warranty of the man who sold it to him.
22. Anyone beyond the river making a claim must be by ordeal.
23. In the same way the English must do justice by the Welsh.
24. Formerly the 'Wentsaete' belonged to the Dunsaete, but more correctly they belong to the West Saxons: and they have to send tribute and hostage there.
25. But the Dunsaete also need, if the King will grant it to them, that at least they should be allowed hostages for peace.

2: THE TIDENHAM CHARTERS

a. TIDENHAM - 'ISTRAT HAFREN' -GRANT AD 703

King Morgan gave ecclesia Istrat Hafren with an uncia of land to Bishop Berthwyn 'from the woods to the plain and the sea'.

b. TIDENHAM - 'ISTRAT HAFREN' -GRANT AD 878 (Liber Llandavensis, after Davies, 1987:182)

'King Hywel returned ecclesia Istrat Hafren to Bishop Nudd'. The same bounds 'From the grove of Ili to the plain and to the sea and from Claswern to Podum Ceuidd'.

c. TIDENHAM - SURVEY AD927 (after Robertson 1939:205-7)

30 Hides - 9 Hides demesne, 21 Hides tenanted land

Tithings	Hideage	Yardlands	Severn Weirs	Wye Weirs
Stroat	12	27	30	
Milton	5	14	14	2
Cingeston	5+1	13	21	12
Bishton	3			15
Llancaut	3			11

Dues: Yardlander - 12d plus 4d alms
Every weir - every other fish to the Lord of the Manor.
Every rare fish - sturgeon, porpoise, herring or sea-fish to the Lord.
Sale of fish governed by the Lord.

Labour: Geneat - labour either on or off the estate, wherever bidden.Ride and carry, supply transport, drive herds and do many other things.

Gebur - do what is due from him - plough half an acre as week work and himself fetch the seed from the lord's barn, a whole one, however, for church dues (supplied with seed) from his own barn. For weir- building (he must supply) 40 larger rods (?) or a fother of small rods, or he shall build 8 yokes for 3 ebb tides, supply 15 poles of field fencing or dig 5, fence and dig 2 poles of the manor-house hedge, reap an acre and a half and mow half an acre and work at other kinds of work, always in proportion to the work.

Renders: 6d after Easter(and) half a sester of honey, at Lammas 6 sesters of malt, at Martinmas a ball of good net yarn. On the same estate it is the rule that he who has 7 swine shall give 3 and thereafter always the tenth, and in spite of this (pay) for the right of having mast when there is mast.

Anglo-Saxon text regarding duties: Se geneat sceal wyrcan swa on lande. Swa of lande. Swa hweðer swa him man byt.7 ridan.7 auerian.7lade lædan. Draf drifen. 7fela ððra ðinga don. Se gebur sceal his rigt don. He sceal erian healfne aecre. to wiceworc.7raecan sylf p saed on hlafordes berne. gehalne to cyrcscette sahwepere of his agenum berne to werbolde. xl.maera oððe an foþer gyrda. oððe diche. v tyne. 7diche.1. gyrde burhheges. Ripe oðer healfne aecer. Mawe healfne. On oþan weorcan wyrce. A be weorcces maeye.

d. 10th CENTURY BOUNDS (after Grundy ,1935: 241-3)

This synd tha land gemaera to Dyddanhamme. Of Waegemuthan to Iwes Heafdan. Of Iwes Heafdan on Stanraewe. Of Stanraewe on Hwitan Heal, of Hwitan Heal on Braden Mor, of Braden Mor on Twyfyrd. of Twyfyrd on Aest Ege Pul ut innan Seafern.

e. LEASE OF TIDENHAM AD 1052-1070 (after Robertson, 1939 :216-9)

Abbot Aelfwig and all the community at Bath have let 30 hides at Tidenham to Archbishop Stigand for life in return for 10marks of gold, 20pounds of silver with reversion on death to the monastery with all its produce and men and in addition 1mark of gold annually and 6 porpoises and 30,000 herrings annually